SAMPLE DESIGN REPORT

ALBERT A. WEBB ASSOCIATES

DUKE PERRIS – APN 302-120-004 to 022

DEVELOPMENT DESIGN REPORT

Prepared for:

Duke REALTY

&

emwd EASTERN MUNICIPAL WATER DISTRICT

OCTOBER 2018

www.webbassociates.com

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(APN 302-120-004 to 022)

DEVELOPMENT DESIGN REPORT

EASTERN MUNICIPAL WATER DISTRICT

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CONTRIBUTING WEBB DEPARTMENTS

ME **MUNICIPAL ENGINEERING**

LD **LAND DEVELOPMENT**

GIS **GEOGRAPHIC INFORMATION SYSTEMS**

ABBREVIATIONS

AC	Acre
APN	Assessor's Parcel Number
CFS	Cubic Feet Per Second
District	Eastern Municipal Water District
EDU	Equivalent Dwelling Units
EMWD	Eastern Municipal Water District
FF	Fire Flow
FPS	Feet per Second
GPD/AC	Gallons per Day per Acre
GPM	Gallons per Minute
HDR	High Density Residential
HGL	Hydraulic Grade Line
Hwy	Highway
IN	Inch
LDR	Low Density Residential
L.F.	Linear Feet
MG	Million Gallons
MDR	Medium Density Residential
MHDR	Medium High Density Residential
MDD	Maximum Day Demand
OS-CH	Open Space-Conservation Habitat
OS-R	Open Space Recreation
OS-R/Basin	Open Space Recreation/Basin
PA	Planning Area
PHD	Peak Hour Demand
POC	Point of Connection
PRV	Pressure Reducing Valve
PSI	Pounds Per Square Inch
PVC	Polyvinyl Chloride
PZ	Pressure Zone
RCFC&WCD	Riverside County Flood Control and Water Conservation District
ROW	Right of Way
SP	Specific Plan
WFMP	Water Facilities Master Plan

SECTION 1 – INTRODUCTION

PURPOSE

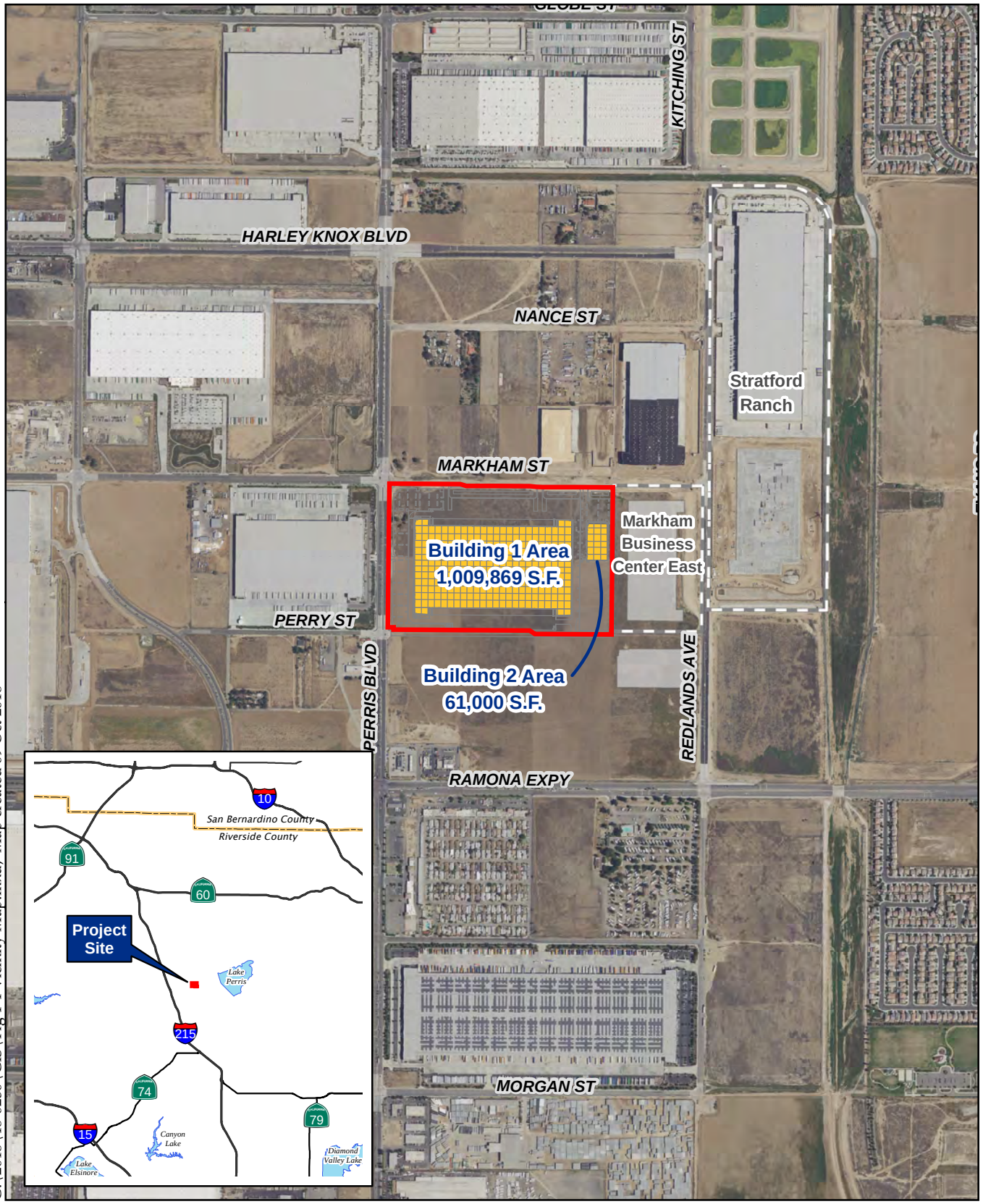
The purpose of this report is to document the results of our analysis of the existing and proposed water, sewer, and recycled water facilities which would serve the proposed Duke Perris development in the City of Perris and to determine and verify the adequacy of the existing and proposed facilities to accommodate the demands and flows generated by the proposed development.

Both the water and sewer analysis were conducted using Eastern Municipal Water District (District) master planning standard guidelines:

- "Sanitary Sewer System Planning & Design," revised on 09/01/2006,
- "2006 Wastewater Master Plan Update," November 2008,
- "Water Facilities Master Plan System Evaluation and Planning Criteria," April 2009,
- "Water System Planning & Design," revised on July 2, 2007,
- "Water Facilities Master Plan" (WFMP) 2015, and
- "Wastewater Facilities Master Plan" 2015.

BACKGROUND

Duke Perris is located at the southeast corner of Perris Blvd and Markham St in the City of Perris as shown on **Figure 1-1**. The project area is bounded by Markham St to the north, a property line 800 ft west of Redlands Blvd to the east, Perry St to the south, and Perris Blvd to the west. Two warehouse type building (1,009,869 sf and 61,000 sf) are proposed for the site with a project area of approximately 55.7 acres.



G:\2018\18-0230\GIS\Fig 1-1 Vicinity Map.mxd; Map created 09 Oct 2018

Sources: Riverside Co. GIS, 2018; USDA NAIP, 2016.

0 500 1,000 1,500 2,000 Feet

Figure 1-1 Vicinity Map and Project Location

Duke Perris Industrial

ALBERT A. WEBB ASSOCIATES

SECTION 2 – WATER FACILITIES

EXISTING WATER FACILITIES

Duke Perris will be served by the 1627 pressure zone (PZ) with the Oleander I and II water storage reservoirs being the primary source of water supply. Each reservoir has a storage capacity of 4.0 million gallons (MG) which have adequate water storage for the proposed development. The floor elevation of these reservoirs is ±1587 ft.

There is an existing 39-inch diameter waterline along Perris Blvd fronting the west side of Duke Perris as shown on **Figure 2-1**. There is also an 8-inch diameter waterline in Markham St fronting the north side of Duke Perris. At the southeast corner of Duke Perris, there is a newly installed 12-inch diameter waterline stub out in Perry Street which comes from an existing 12-inch diameter waterline in Redlands Blvd. These existing waterlines will be the primary source of water supply to the project.

EMWD has confirmed that the existing system has adequate capacity for Duke Perris based on the results of the Hydraulic Boundary Condition analysis provided in **Appendix A**.

PROPOSED WATER DEMAND

Provided in Table 2-1 is a summary of the peaking factors used for the analysis and was based on the recommendations found in the Planning and Design Criteria section of the District's WFMP.

Table 2-1 Peaking Factors

Land Use	Maximum Day (MDD:ADD)	Peak Hour (PHD:ADD)
Low and Medium-Density Residential		
Small Pressure Zone (under 500 gpm ADD)	3.0	6.0
Medium Pressure Zone (500 to 2,000 gpm ADD)	2.5	5.0
Large Pressure Zones (greater than 2,000 gpm ADD)	2.0	4.0
All Others	2.0	4.0

Estimated potable water demand for the project are given in Table 2-2 and are based on the District's current planning standards. Fire flow requirement for the project is 4,000 gpm Building 1 and 2,625 gpm for Building 2 for a duration of 4 hours assuming a 50 percent reduction for fire sprinklers. These fire flow requirements are based on the California Fire Code Table B105.1 which the City of Perris typically uses as their standard (see **Appendix B**).

Table 2-2 Water Demand Estimate

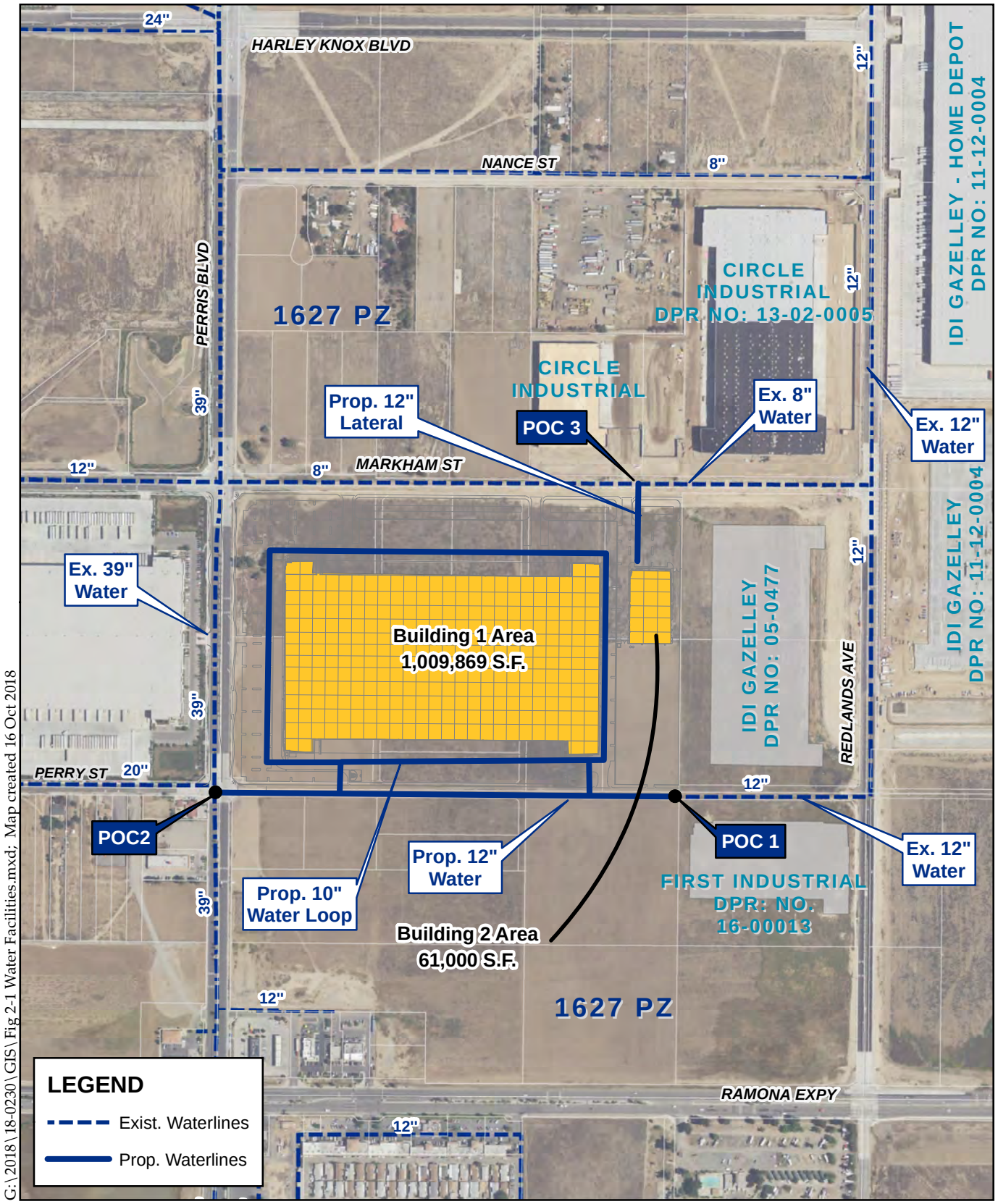
Phase No.	Land Use Zoning	Area (Acres)	Demand Rates* (gal/ac/day)	ADD (gal/day)	ADD (gal/min)	MDD** (gal/day)	MDD (gal/min)	PHD** (gal/min)
1	Commercial Area	55.7	2200	122,540	85	245,080	170	340
	4 Hour Fire Flow						4,000	
Total:		55.7		122,540	85	245,080	4,170	340

*Based on EMWD WFMP Planning and Sizing Criteria Table 5-1

*Based on EMWD WFMP Peaking Factors Table 5-2

PROPOSED PIPELINE IMPROVEMENT

Waterline improvements include a 2,000 ft long 12-inch diameter waterline in Perry St fronting the south side of Duke Perris between Perris Blvd and the existing 12-inch waterline stub-out shown on **Figure 2-1**. On-site water pipeline improvements include a 10-inch diameter waterline loop around the proposed Building 1 with two tie-in points to the proposed 12-inch diameter waterline in Perry St with two DCDA's, fire pumps, and meters. Building 2 will require a 12-inch diameter lateral with DCDA and fire pumps at POC3 off the existing 8-inch diameter waterline in Markham St. Domestic waterline laterals with meters will also be required for each building, one from the proposed 12-inch diameter waterline in Perry St and one from the existing 8-inch diameter waterline in Markham St.



G:\2018\18-0230\GIS\Fig 2-1 Water Facilities.mxd; Map created 16 Oct 2018

Sources: EMWD, 2017; Riverside Co. GIS, 2018; USDA NAIP, 2016.

0 600 1,200 Feet

Figure 2-1 Water Facilities
Duke Perris Industrial

ALBERT A. WEBB ASSOCIATES

HYDRAULIC ANALYSIS

A hydraulic analysis was conducted with the use of the District's Water Master Plan model which was revised by the District for the New Business Development. The version of the model used is entitled NDB_EMWD_POTABLE_20170321_POSFF_Diurnal_v2 and was run using Innovyze's® InfoWater® software version 12.4.

Scenario Description

Multiple scenarios were analyzed as part of this plan of service to determine the adequacy of both the existing and proposed facilities to accommodate Duke Perris. The base scenario was considered to be the Existing_EPS_MDD model scenario which has existing MDD built into the model. All model scenarios used for this analysis are extended period simulations which has a pre-defined diurnal curve based on historical data. The PHD is built into the diurnal curve and takes place at hour 7 of each day with a MDD peaking factor of 2.

Many warehouse type buildings within the vicinity of Duke Perris have recently been developed or are under construction but are not yet accounted for in District's model of the existing system. Therefore, demands for the following warehouses were added to the existing system model (see Figure 2-1):

- Circle Industrial – MDD = 25 gpm
- Circle Industrial DPR No. 13-02-005 – MDD = 60 gpm
- First Industrial DPR No. 16-00013 – MDD = 31 gpm
- IDI Gazeley – Home Depot - MDD = 96 gpm
- IDI Gazeley – DPR No. 11-12-004 – MDD = 72 gpm
- IDI Gazeley – DPR No. 05-0477 – MDD = 63 gpm

Minor losses were added to the model at the proposed tie-in points to the waterline in Perry St to represent the losses through the DCDA's and meters.

MODEL RESULTS

Model results are provided graphically in **Appendix C**. Figures C1, C2, and C3 represents the model results of the proposed condition with Duke Perris proposed improvements during the MDD, MDD plus fire, and PHD conditions, respectively. Supplemental graphics of system pressures at the point of connections are also provided in Appendix C as well as tables summarizing velocities and nodes with low pressures.

It was determined through the hydraulic analysis that Duke Perris can be adequately served by the existing system with the proposed facilities and still meet the District's

pressure requirements. Note that the onsite pressures shown on Figure C2 represent the estimated pressures without an onsite fire booster station. Private on-site booster pumps are proposed for the fire system which typically boosts pressures to around 165 psi. Any off-site high pressures for the domestic water will be reduced by an on-site pressure regulator.

WATER SUMMARY AND RECOMMENDATIONS

With the proposed facilities outlined in this section of the Plan of Service, Duke Perris is expected to have adequate pressure during the demand conditions analyzed and still meet District minimum pressure and maximum velocity constraints. This analysis was based on the assumption that the District's model accurately represents the existing conditions.

Based on the results of the analysis, it is recommended that the District authorize the developer to proceed to the next phase of planning the proposed waterline improvements outlined in this report.

SECTION 3 – SEWER FACILITIES

EXISTING SEWER FACILITIES

The project is fronted by existing sewer lines in two locations. There is a 10-inch diameter line in Perris Blvd at the southwest corner of the project. This line flows south to a 15-inch trunk line in the Ramona Expressway as shown on **Figure 3-1**.

There is also a 10-inch diameter line fronting the northeast corner of the project in Markham Street. This line flows east and connects to a 24-inch trunk line flowing south in Redlands Avenue.

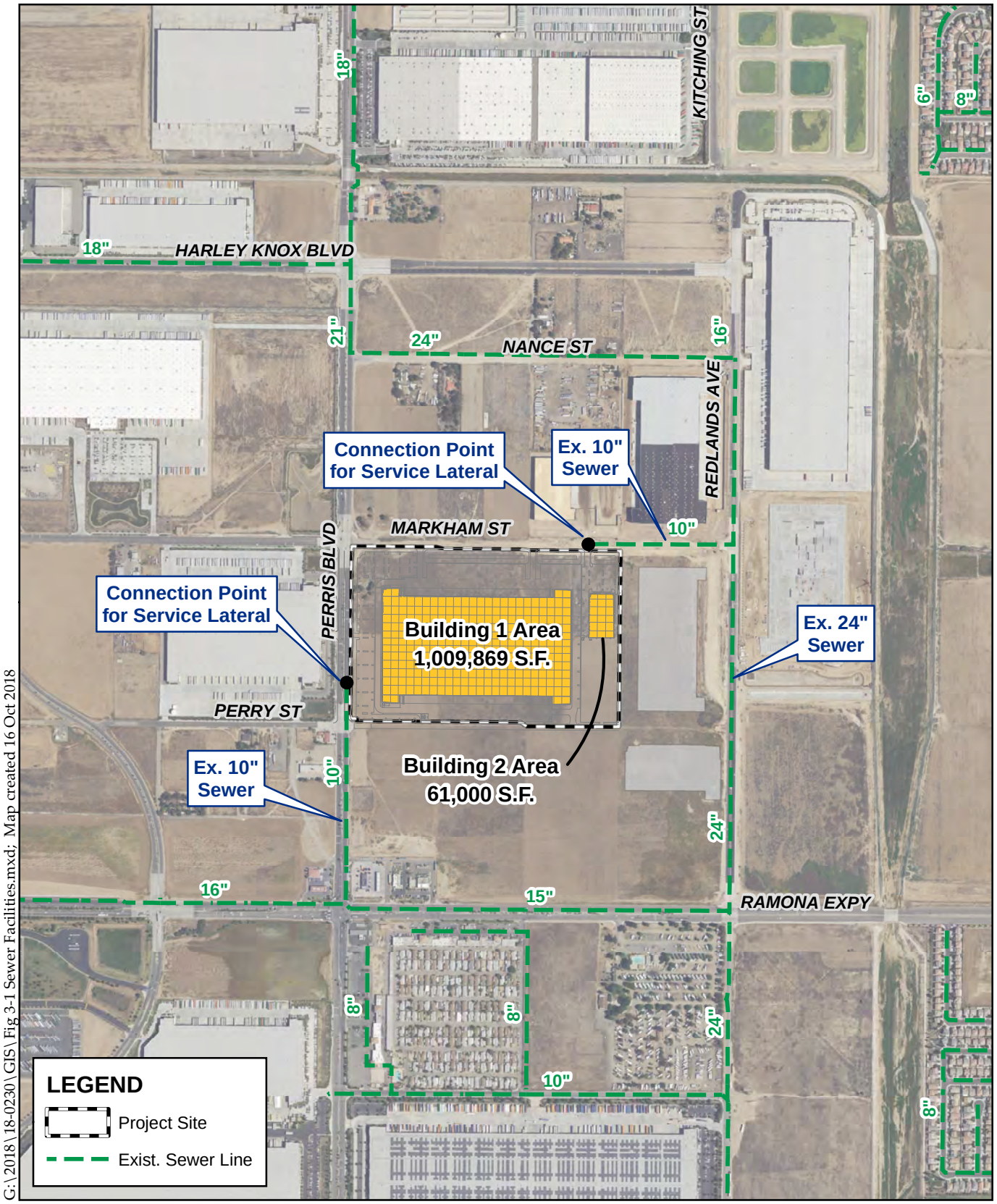
Estimated peak flows for Duke Perris are provided in **Table 3-1** along with the assumed sewer generation rates.

Table 3-1 Projected Wastewater Flows

Property Zoning	Acres	Gen. Rates (gal/acre/day)*	ADF (gal/day)	Peaking Factor	Peak Flow (gal/day)	Peak Flow (gal/min)	Peak Flow (cfs)
Duke Perris (Commercial)	55.7	1700	94,690	2.8	265,132	184	0.410
Total:	**55.7**		**94,690**		**265,132**	**184**	**0.410**

PROPOSED SEWER FACILITIES

Due to the large footprint of the proposed Building 1, the project proposes to split the generated sewage flows between the two lines. Building 2 will flow to the north to the existing 10-inch diameter sewer line in Markham St. Estimated peak flows in the 10-inch diameter line in Perris Blvd are provided in **Table 3-2** along with the assumed sewer generation rates.



G:\2018\18-0230\GIS\Fig 3-1 Sewer Facilities.mxd; Map created 16 Oct 2018

Sources: EMWD, 2016; Riverside Co. GIS, 2018; USDA NAIP, 2016.

Figure 3-1 Sewer Facilities
Duke Perris Industrial

ALBERT A. WEBB ASSOCIATES

Table 3-2 Perris Blvd Tributary Flows

Property Zoning	Acres	Gen. Rates (gal/acre/day)	ADF (gal/day)	Peaking Factor	Peak Flow (gal/day)	Peak Flow (gal/min)	Peak Flow (cfs)
Duke Perris (Commercial)	27.9	1700	47,345	2.8	132,566	92	0.205
Commercial	37.5	1700	63,750	2.8	178,500	124	0.276
Total:	**65.4**		**111,095**		**311,066**	**216**	**0.481**

The governing section of the 10-inch diameter sewer line in Perris Blvd has the District minimum slope of 0.0032 ft/ft which provides a design capacity (0.50 d/D) of 0.538 cfs. Peak flows from Duke Perris and the existing tributary area total 0.483 cfs or approximately 0.47 d/D of the existing 10-inch diameter sewer.

The remaining peak flows enter the 10-inch diameter line in Redlands Ave. These are provided in **Table 3-3** along with the assumed sewer generation rates.

Table 3-3 Markham St Tributary Flows

Property Zoning	Acres	Gen. Rates (gal/acre/day)*	ADF (gal/day)	Peaking Factor	Peak Flow (gal/day)	Peak Flow (gal/min)	Peak Flow (cfs)
Duke Perris (Commercial)	27.9	1700	47,345	2.8	132,566	92	0.205
Commercial	19.9	1700	33,830	2.8	94,724	66	0.147
Total:	**47.8**		**81,175**		**227,290**	**158**	**0.352**

The governing section of the 10-inch diameter sewer line in Markham St has the District minimum slope of 0.0032 ft/ft which provides a design capacity (0.50 d/D) of 0.538 cfs. Peak flows from Duke Perris and the existing tributary area total 0.257 cfs or approximately 0.40 d/D of the existing 10-inch diameter sewer.

SEWER SUMMARY AND RECOMMENDATIONS

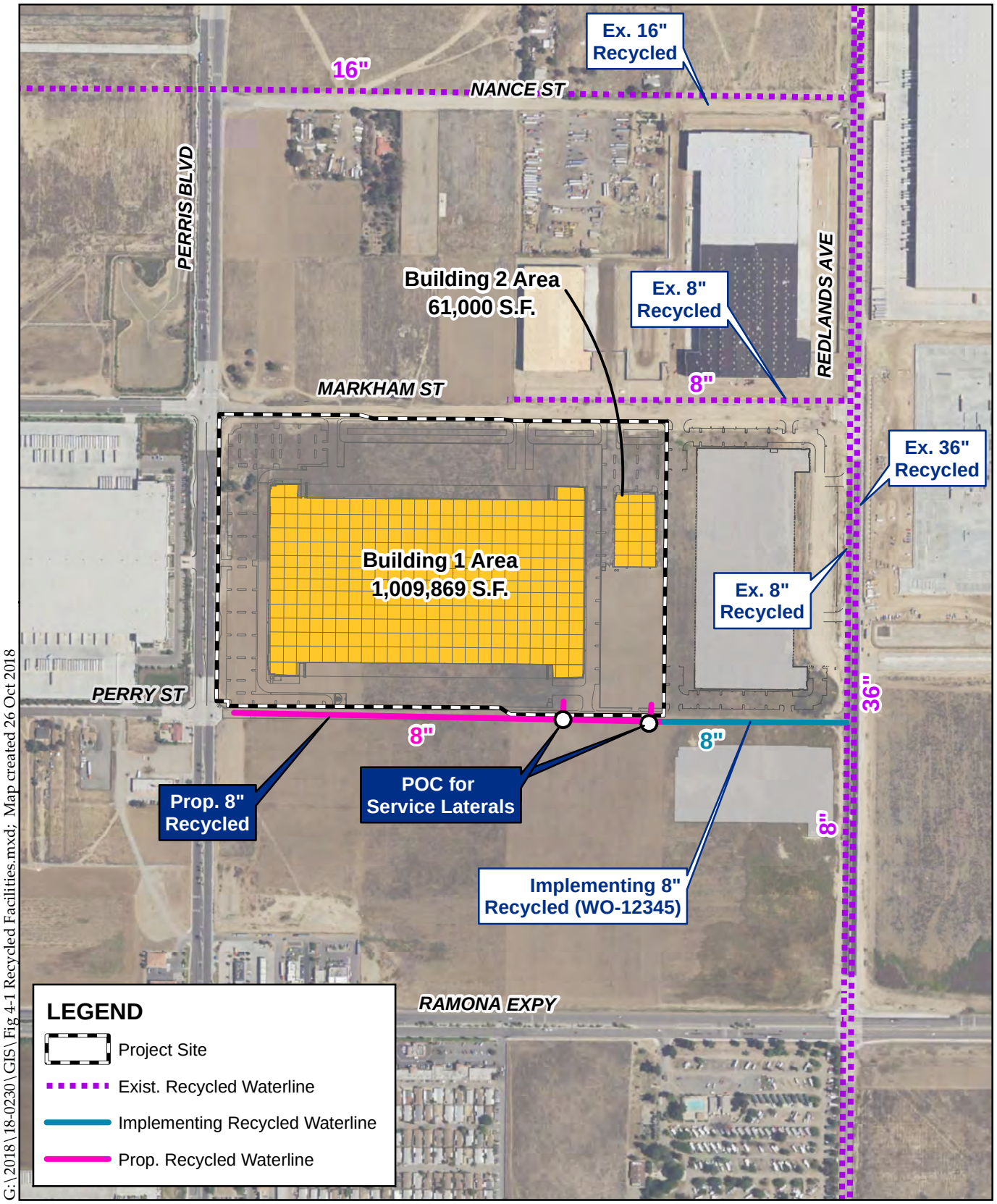
Duke Perris will not require the installation of any offsite sewer pipe. The site will be serviced by connections to the adjacent sewer lines in Perris Blvd to the west and Markham St to the north. Both pipes have adequate capacity for the additional flows and are connected directly to regional trunk lines.

SECTION 4 – RECYCLED WATER FACILITIES

EXISTING AND PROPOSED RECYCLED WATER FACILITIES

A copy of the Recycled Water Use Exhibit (RWUE) for the project site is provided in **Appendix D** which was prepared by a different landscaping architect. The project will utilize the Implementing 8-inch diameter recycled waterline stub-out near the southeast corner of the project site on Perry St. This implementing recycled waterline is connected to an existing 8-inch diameter waterline in Redlands Ave which parallels the large 36-inch diameter recycled water effluent line (**Figure 4-1**). One point of connection for each of the proposed buildings will come off of a proposed 8-inch diameter recycled waterline in Perry St fronting the proposed development.

Proposed water, sewer, and recycled water facilities for this project are summarized in the Development Design Conditions provided in **Appendix E**.



G:\2018\18-0230\GIS\Fig 4-1 Recycled Facilities.mxd; Map created 26 Oct 2018

Sources: EMWD, 2018; Riverside Co. GIS, 2018; USDA NAIP, 2016.

Figure 4-1 Recycled Water Facilities
Duke Perris Industrial

ALBERT A. WEBB ASSOCIATES

Appendix A
EMWD's Fire Flow Boundary Conditions

EASTERN MUNICIPAL WATER DISTRICT

COMPUTER MODEL TEST

Grid Number:	49D	Date:	4-17-2017
Customer Name:	Duke Realty c/o Adam Schmid	Address:	200 spectrum Center Drive. Ste. 1600
City, State Zip:	Irvine, CA 92618		
Contact Name:	Adam Schmid		
Phone:	(949) 797-7038	Cell:	
Fax:		Email:	ADAM.SCHMID@DUKEREALTY.COM
Project Record Number:	WS20170000288	WO/CO:	WO 15650
Project Name:	Duke Perris	APN:	302-120-004 ELAL
(Approximate) Test & Hydrant Location:	(1) 251 feet West of the intersection of Redlands Ave. & Markham St. See attached map. (2) 347 feet East of the intersection of Perris Blvd. & Markham St. See attached map.		
MODEL	NBD_EPS_EMWD_Potable_2308_wya20151019_FF Diurnal.mxd		

POC Test Location:	EMWD RESULTS			Requested	Flow Availability for Fire Department
	Fire Flow (1)	Fire Flow (2)			
Elevation (Ft):	1,454	1,462			
Steady State, Dynamic (psi):	72.30	68.70			
Residual Pressure (psi):	64.40	60.50			
Tested FF(gpm):	2,000	2,000			
Combined Total (gpm):	4,000 gpm for FF & 68 gpm for PHD			4,000	
Number of Hydrants:	Used 2 Test Nodes			2	
Duration Tested @:	4 Hour			4	

Demand Conditions:	Max Day						
Pressure Zone/Tank Names(s)/Level(s):	PZ 1627 Oleander I Tank Base elevation 1587 Feet						
Pump Operating Status:	ON		Computer Model Setting	EPS			

Number of Points of connections (POC):	POC (Circle One)		Reason (Circle what Applies)				
	One	Two or More	Plan of Service	Limited Capacity (Existing Systems)	Supply Redundancy	Conditions of Approval	Fire Sprinkler Connection(s)

Comments: Upon installation of proposed 12" waterline, the water system will be capable of providing 4,000 GPM for 4 hours at a minimum of 20 psi, as shown in the attached map. These Fire Flow test results may need to be complemented by a Plan of Service and do not include all facility conditioning that may be required for this project. No Fire Flow or COA's Requirements provided, if any Fire Flow changes occur in the future, you may need to resubmit another Fire Flow test at the requester's expense.

The above results are not a guarantee the District's system will supply water to the project at any specific flows or pressures. These results were determined from a computer simulation of the District's water system and/or from hydraulic calculations pertaining to distribution pipelines: The capacity of the service laterals, meters, backflow assemblies, on-site fire system, and other appurtenances were not considered in these results. The design and sizing of service laterals and downstream facilities shall be the responsibility of the Project Sponsor.

EMWD's Fire Flow test results are valid for six months from the date of testing.

Completed By: Rudy Esparza

Should you have any questions or need additional information, please contact me at (951) 928-3777, ext. 4478.

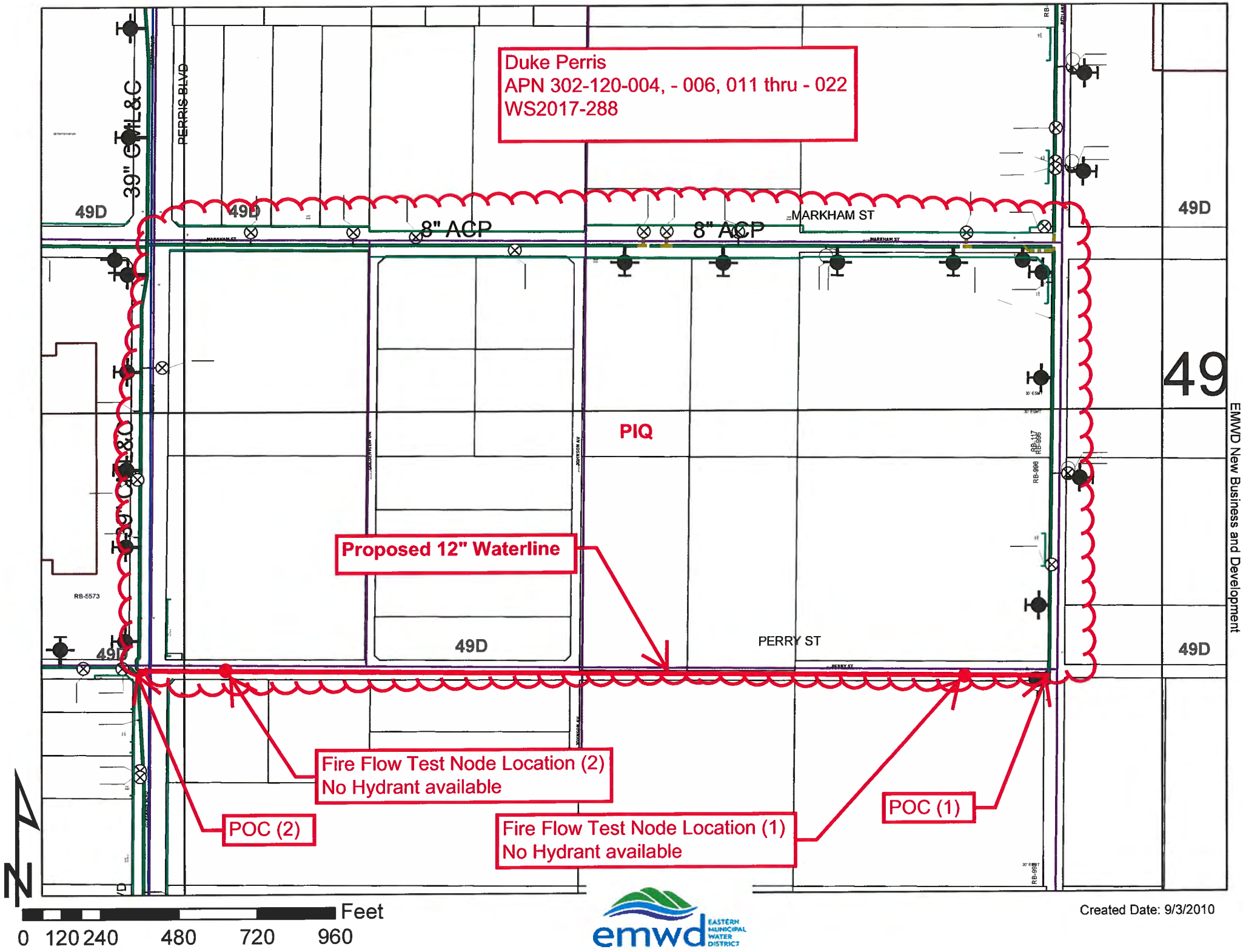
Sincerely, RE

Rudy Esparza
Sr. Engineering Technician
New Business Development

Date: 4-17-2017

Reviewed By: EC

Date: 4/17/17


Duke Perris
APN 302-120-004, - 006, 011 thru - 022
WS2017-288
39" CMP L&C
PERRIS BLVD
49D
8" ACP
MARKHAM ST
PIQ
Proposed 12" Waterline
PERRY ST
Fire Flow Test Node Location (2)
No Hydrant available
POC (2)
Fire Flow Test Node Location (1)
No Hydrant available
POC (1)
RB-5573
49
EMWD New Business and Development
N
0 120 240 480 720 960
Feet
emwd EASTERN MUNICIPAL WATER DISTRICT
Created Date: 9/3/2010

Hydraulic Boundary Conditions, In The Main Water Pipeline[6][7], Based on Hydraulic Model Results

Project Name: Duke Perris WS2017-288 POC (1)
Pressure Zone: 1627
Model Version (12)

ADD (GPM): 17
FFD (GPM): 4,000 Split
Duration (Hours): 4

POC Location: POC (1)
Elevation (ft): 1,454.0
APN / TR: / WO 302-120-004 ETAL / WO 15650
(See Attached Exhibit)

	Modeling Scenario (12)	Operational Conditions:	Project Demands[2][3][11] (gpm): Project's Domestic Water Demands[2][3][11] (gpm)	Project Demands[2][3][11] (gpm): Fire Flow Demand[4] (gpm)	Existing system (With No Improvements): HGL (ft)	Existing system (With No Improvements): Pressure (psi)	Existing system (With Improvements)[1]: HGL (ft)	Existing system (With Improvements)[1]: Pressure (psi)
Operational Demand	EPS, MDD, Pumps On (8)	MDD	34				1,621	72
Operational Demand	EPS, MDD, Pumps On (8)	PHD	68				1,602	65
Operational Demand	EPS, ADD, Pumps On (8)	MHD						
Fire Flow Demand		FFD + MDD						
Fire Flow Demand	EPS, MDD, Pumps On (8)	FFD + MDD	34	2,000			1,603	64

Footnotes (see page 2 for additional footnotes):
(1) If improvements are required, please describe the improvements here:

Minimum Pressure Criteria:

50 PSI	...under PHD, MDD, and MHD
20 PSI	...under MDD + FFD

Minimum Criteria, Velocities in Pipelines:
Equal to or less than 5 fps: ...for MDD
Equal to or less than 10 fps: ...for PHD
Equal to or less than 15 fps: ...for FF + MDD

	Adequate?	Comments:
Available Firm Pumping Capacity:	YES	
Available Firm Pumping Capacity, w/ Electrical Outage :	YES	
Available Storage Capacity:	YES	

Additional Comments:

Prepared by: Rudy Esparza
Date: 4/18/2017

Reviewed by: EC
Date: 4/18/17

File: PZ 1927 302-120-004 ETAL WS2017-288 POC (1).xlsx
FORM: NBD-068 (July 25, 2016) — Date Printed: 4/18/2017, 10:37 AM

Hydraulic Boundary Conditions, In The Main Water Pipeline[6][7], Based on Hydraulic Model Results			
Project Name: Duke Perris WS2017-288 POC (1)	**ADD (GPM):**	17	
Pressure Zone: 1627	**FFD (GPM):**	4,000 Split	
Model Version (12)	**Duration (Hours):**	4	

Acronyms:

ADD: Average Day Demand, in GPM	**GPM:** Gallons Per Minute	**PHD:** Peak-Hour Demand, in GPM
EPS: Extended Period Simulation	**HGL:** Hydraulic Grade-Line, in feet	**POC:** Point Of Connection
FFD[3]: Fire Flow Demand, in GPM	**MDD:** Maximum Day Demand, in GPM	**PSI:** Pounds Per Inch
FPS: Feet per second	**MHD:** Minimum Hour Demand, in GPM	**SSS:** Steady State Simulation

Footnotes (Ct'd):

(2) Project Demands include ADD of the proposed project, peaked for each test scenario, in accordance with the latest EMWD Water Master Plan Design Criteria

(3) Domestic water demands from existing services are already included in the Model

(4) This is NOT a Fire Flow Test Report: The customer shall verify with the Fire Marshall if a separate Fire Flow Test Report/Letter is required for Jurisdictional Project approval.

(5) All required storage and pumping shall be evaluated in a POS report, per the latest EMWD Master Plan Design Criteria

(6) Applicants, or their designees, shall design service laterals, commencing from the point of connection(s) in EMWD's main pipeline(s), including main extension(s), lateral(s), meter(s), and all post-meter appurtenances, taking into consideration resulting head losses, pad elevations, and building height, such that the pressure delivered to each floor level and service is adequate to meet jurisdictional requirements.

(7) In addition to design requirements, operational minimum and maximum pressures are used to identify and record Service Agreements for Low and High pressure conditions in Residential use. Commercial, Institutional, and Industrial uses do not require low and high pressure recordation.

(8) Storage tanks: Initial levels set at 75% full in EPS

(9) Storage tanks: Initial levels set at 50% full in SSS, Pumps Off

(10) Storage tanks: Initial levels set at 50% full in SSS, Pumps On

(11) Existing demands are based on COINS data, calendar-year 2013

(12) For EPS modeling, use file name: ***NBD_EPS_EMWD_POTABLE_2308_WYA20151019.mxd***

Hydraulic Boundary Conditions, In The Main Water Pipeline[6][7], Based on Hydraulic Model Results

Project Name: Duke Perris WS2017-288 POC (2)
Pressure Zone: 1627
Model Version (12)

ADD (GPM): 17
FFD (GPM): 4,000 Split
Duration (Hours): 4

POC Location: POC (2)
Elevation (ft): 1,462.0
APN / TR: / WO 302-120-004 ETAL / WO 15650
(See Attached Exhibit)

	Modeling Scenario (12)	Operational Conditions:	Project's Domestic Water Demands[2][3][11] (gpm)	Fire Flow Demand[4] (gpm)	Existing system (With No Improvements) HGL (ft)	Existing system (With No Improvements) Pressure (psi)	Existing system (With Improvements)[1] HGL (ft)	Existing system (With Improvements)[1] Pressure (psi)
Operational Demand	EPS, MDD, Pumps On (8)	MDD	34				1,621	69
Operational Demand	EPS, MDD, Pumps On (8)	PHD	68				1,602	61
Operational Demand	EPS, ADD, Pumps On (8)	MHD						
Fire Flow Demand		FFD + MDD						
Fire Flow Demand	EPS, MDD, Pumps On (8)	FFD + MDD	34	2,000			1,621	69

Footnotes (see page 2 for additional footnotes):
(1) If improvements are required, please describe the improvements here:

Minimum Pressure Criteria:

50 PSI	...under PHD, MDD, and MHD
20 PSI	...under MDD + FFD

Minimum Criteria, Velocities in Pipelines:
Equal to or less than 5 fps: ...for MDD
Equal to or less than 10 fps: ...for PHD
Equal to or less than 15 fps: ...for FF + MDD

	Adequate?	Comments:
Available Firm Pumping Capacity:	YES	
Available Firm Pumping Capacity, w/ Electrical Outage :	YES	
Available Storage Capacity:	YES	

Additional Comments:

Prepared by: Rudy Esparza
Date: 4/18/2017

Reviewed by: _____
Date: _____

File: PZ 1927 302-120-004 ETAL WS2017-288 POC (2).xlsx
FORM: NBD-068 (July 25, 2016) --- Date Printed: 4/18/2017, 10:37 AM

Hydraulic Boundary Conditions, In The Main Water Pipeline[6][7], Based on Hydraulic Model Results			
Project Name: Duke Perris WS2017-288 POC (2)	**ADD (GPM):**	17	
Pressure Zone: 1627	**FFD (GPM):**	4,000 Split	
Model Version (12)	**Duration (Hours):**	4	

Acronyms:

ADD: Average Day Demand, in GPM
EPS: Extended Period Simulation
FFD[3]: Fire Flow Demand, in GPM
FPS: Feet per second
GPM: Gallons Per Minute
HGL: Hydraulic Grade-Line, in feet
MDD: Maximum Day Demand, in GPM
MHD: Minimum Hour Demand, in GPM
PHD: Peak-Hour Demand, in GPM
POC: Point Of Connection
PSI: Pounds Per Inch
SSS: Steady State Simulation

Footnotes (Ct'd):

(2) Project Demands include ADD of the proposed project, peaked for each test scenario, in accordance with the latest EMWD Water Master Plan Design Criteria

(3) Domestic water demands from existing services are already included in the Model

(4) This is NOT a Fire Flow Test Report: The customer shall verify with the Fire Marshall if a separate Fire Flow Test Report/Letter is required for Jurisdictional Project approval.

(5) All required storage and pumping shall be evaluated in a POS report, per the latest EMWD Master Plan Design Criteria

(6) Applicants, or their designees, shall design service laterals, commencing from the point of connection(s) in EMWD's main pipeline(s), including main extension(s), lateral(s), meter(s), and all post-meter appurtenances, taking into consideration resulting head losses, pad elevations, and building height, such that the pressure delivered to each floor level and service is adequate to meet jurisdictional requirements.

(7) In addition to design requirements, operational minimum and maximum pressures are used to identify and record Service Agreements for Low and High pressure conditions in Residential use. Commercial, Institutional, and Industrial uses do not require low and high pressure recordation.

(8) Storage tanks: Initial levels set at 75% full in EPS

(9) Storage tanks: Initial levels set at 50% full in SSS, Pumps Off

(10) Storage tanks: Initial levels set at 50% full in SSS, Pumps On

(11) Existing demands are based on COINS data, calendar-year 2013

(12) For EPS modeling, use file name: ***NBD_EPS_EMWD_POTABLE_2308_WYA20151019.mxd***

Appendix B
Fire Code Standards

ALBERT A. WEBB ASSOCIATES

CALIFORNIA FIRE CODE – MATRIX ADOPTION TABLE
APPENDIX B – FIRE-FLOW REQUIREMENTS FOR BUILDINGS

(Matrix Adoption Tables are non-regulatory, intended only as an aid to the user.
See Chapter 1 for state agency authority and building applications.)

Adopting Agency	BSC	SFM		HCD			DSA		OSHPD				BSCC	DHS	AGR	DWR	CEC	CA	SL	SLC
		T-24	T-19*	1	2	1/AC	AC	SS	1	2	3	4								
Adopt Entire Chapter																				
Adopt Entire Chapter as amended (amended sections listed below)		X																		
Adopt only those sections that are listed below																				
[California Code of Regulations, Title 19, Division 1]																				
Chapter / Section																				
B105.2		X																		

* The *California Code of Regulations* (CCR), Title 19, Division 1 provisions that are found in the *California Fire Code* are a reprint from the current CCR, Title 19, Division 1 text for the code user's convenience only. The scope, applicability and appeals procedures of CCR, Title 19, Division I remain the same.

APPENDIX B
FIRE-FLOW REQUIREMENTS FOR BUILDINGS

The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.

SECTION B101
GENERAL

B101.1 Scope. The procedure for determining fire-flow requirements for buildings or portions of buildings hereafter constructed shall be in accordance with this appendix. This appendix does not apply to structures other than buildings.

SECTION B102
DEFINITIONS

B102.1 Definitions. For the purpose of this appendix, certain terms are defined as follows:

FIRE-FLOW. The flow rate of a water supply, measured at 20 pounds per square inch (psi) (138 kPa) residual pressure, that is available for fire fighting.

FIRE-FLOW CALCULATION AREA. The floor area, in square feet (m^2), used to determine the required fire flow.

SECTION B103
MODIFICATIONS

B103.1 Decreases. The fire chief is authorized to reduce the fire-flow requirements for isolated buildings or a group of buildings in rural areas or small communities where the development of full fire-flow requirements is impractical.

B103.2 Increases. The fire chief is authorized to increase the fire-flow requirements where conditions indicate an unusual susceptibility to group fires or conflagrations. An increase shall not be more than twice that required for the building under consideration.

B103.3 Areas without water supply systems. For information regarding water supplies for fire-fighting purposes in rural and suburban areas in which adequate and reliable water supply systems do not exist, the fire code official is authorized to utilize NFPA 1142 or the *California Wildland-Urban Interface Code.*

SECTION B104
FIRE-FLOW CALCULATION AREA

B104.1 General. The fire-flow calculation area shall be the total floor area of all floor levels within the exterior walls, and under the horizontal projections of the roof of a building, except as modified in Section B104.3.

B104.2 Area separation. Portions of buildings which are separated by fire walls without openings, constructed in accordance with the *California Building Code*, are allowed to be considered as separate fire-flow calculation areas.

B104.3 Type IA and Type IB construction. The fire-flow calculation area of buildings constructed of Type IA and Type IB construction shall be the area of the three largest successive floors.

Exception: Fire-flow calculation area for open parking garages shall be determined by the area of the largest floor.

SECTION B105
FIRE-FLOW REQUIREMENTS FOR BUILDINGS

B105.1 One- and two-family dwellings. The minimum fire-flow and flow duration requirements for one- and two-family

dwellings having a fire-flow calculation area that does not exceed 3,600 square feet (344.5 m^2) shall be 1,000 gallons per minute (3785.4 L/min) for 1 hour. Fire-flow and flow duration for dwellings having a fire-flow calculation area in excess of 3,600 square feet (344.5m^2) shall not be less than that specified in Table B105.1.

Exception: A reduction in required fire-flow of 50 percent, as approved, is allowed when the building is equipped with an approved automatic sprinkler system.

B105.2 Buildings other than one- and two-family dwellings. The minimum fire-flow and flow duration for buildings other than one- and two-family dwellings shall be as specified in Table B105.1.

Exceptions:

1. A reduction in required fire-flow of up to 75 percent, as approved, is allowed when the building is provided with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2. The resulting fire-flow shall not be less than 1,500 gallons per minute (5678 L/min) for the prescribed duration as specified in Table B105.1.
2. *[SFM] Group B, S-2 and U occupancies having a floor area not exceeding 1,000 square feet, primarily constructed of noncombustible exterior walls with wood or steel roof framing, having a Class A roof assembly, with uses limited to the following or similar uses:*
   - *2.1. California State Parks buildings of an accessory nature (restrooms).*
   - *2.2. Safety roadside rest areas, (SRRA), public restrooms.*
   - *2.3. Truck inspection facilities, (TIF), CHP office space and vehicle inspection bays.*
   - *2.4. Sand/salt storage buildings, storage of sand and salt.*

TABLE B105.1
MINIMUM REQUIRED FIRE-FLOW AND FLOW DURATION FOR BUILDINGS

FIRE-FLOW CALCULATION AREA (square feet)					FIRE-FLOW (gallons per minute)[b]	FLOW DURATION (hours)
Type IA and IB[a]	Type IIA and IIIA[a]	Type IV and V-A[a]	Type IIB and IIIB[a]	Type V-B[a]		
0-22,700	0-12,700	0-8,200	0-5,900	0-3,600	1,500	2
22,701-30,200	12,701-17,000	8,201-10,900	5,901-7,900	3,601-4,800	1,750	
30,201-38,700	17,001-21,800	10,901-12,900	7,901-9,800	4,801-6,200	2,000	
38,701-48,300	21,801-24,200	12,901-17,400	9,801-12,600	6,201-7,700	2,250	
48,301-59,000	24,201-33,200	17,401-21,300	12,601-15,400	7,701-9,400	2,500	
59,001-70,900	33,201-39,700	21,301-25,500	15,401-18,400	9,401-11,300	2,750	
70,901-83,700	39,701-47,100	25,501-30,100	18,401-21,800	11,301-13,400	3,000	3
83,701-97,700	47,101-54,900	30,101-35,200	21,801-25,900	13,401-15,600	3,250	
97,701-112,700	54,901-63,400	35,201-40,600	25,901-29,300	15,601-18,000	3,500	
112,701-128,700	63,401-72,400	40,601-46,400	29,301-33,500	18,001-20,600	3,750	
128,701-145,900	72,401-82,100	46,401-52,500	33,501-37,900	20,601-23,300	4,000	4
145,901-164,200	82,101-92,400	52,501-59,100	37,901-42,700	23,301-26,300	4,250	
164,201-183,400	92,401-103,100	59,101-66,000	42,701-47,700	26,301-29,300	4,500	
183,401-203,700	103,101-114,600	66,001-73,300	47,701-53,000	29,301-32,600	4,750	
203,701-225,200	114,601-126,700	73,301-81,100	53,001-58,600	32,601-36,000	5,000	
225,201-247,700	126,701-139,400	81,101-89,200	58,601-65,400	36,001-39,600	5,250	
247,701-271,200	139,401-152,600	89,201-97,700	65,401-70,600	39,601-43,400	5,500	
271,201-295,900	152,601-166,500	97,701-106,500	70,601-77,000	43,401-47,400	5,750	
295,901-Greater	166,501-Greater	106,501-115,800	77,001-83,700	47,401-51,500	6,000	
—	—	115,801-125,500	83,701-90,600	51,501-55,700	6,250	
—	—	125,501-135,500	90,601-97,900	55,701-60,200	6,500	
—	—	135,501-145,800	97,901-106,800	60,201-64,800	6,750	
—	—	145,801-156,700	106,801-113,200	64,801-69,600	7,000	
—	—	156,701-167,900	113,201-121,300	69,601-74,600	7,250	
—	—	167,901-179,400	121,301-129,600	74,601-79,800	7,500	
—	—	179,401-191,400	129,601-138,300	79,801-85,100	7,750	
—	—	191,401-Greater	138,301-Greater	85,101-Greater	8,000	

For SI: 1 square foot = 0.0929 m^2, 1 gallon per minute = 3.785 L/m, 1 pound per square inch = 6.895 kPa.

a. Types of construction are based on the *California Building Code*.

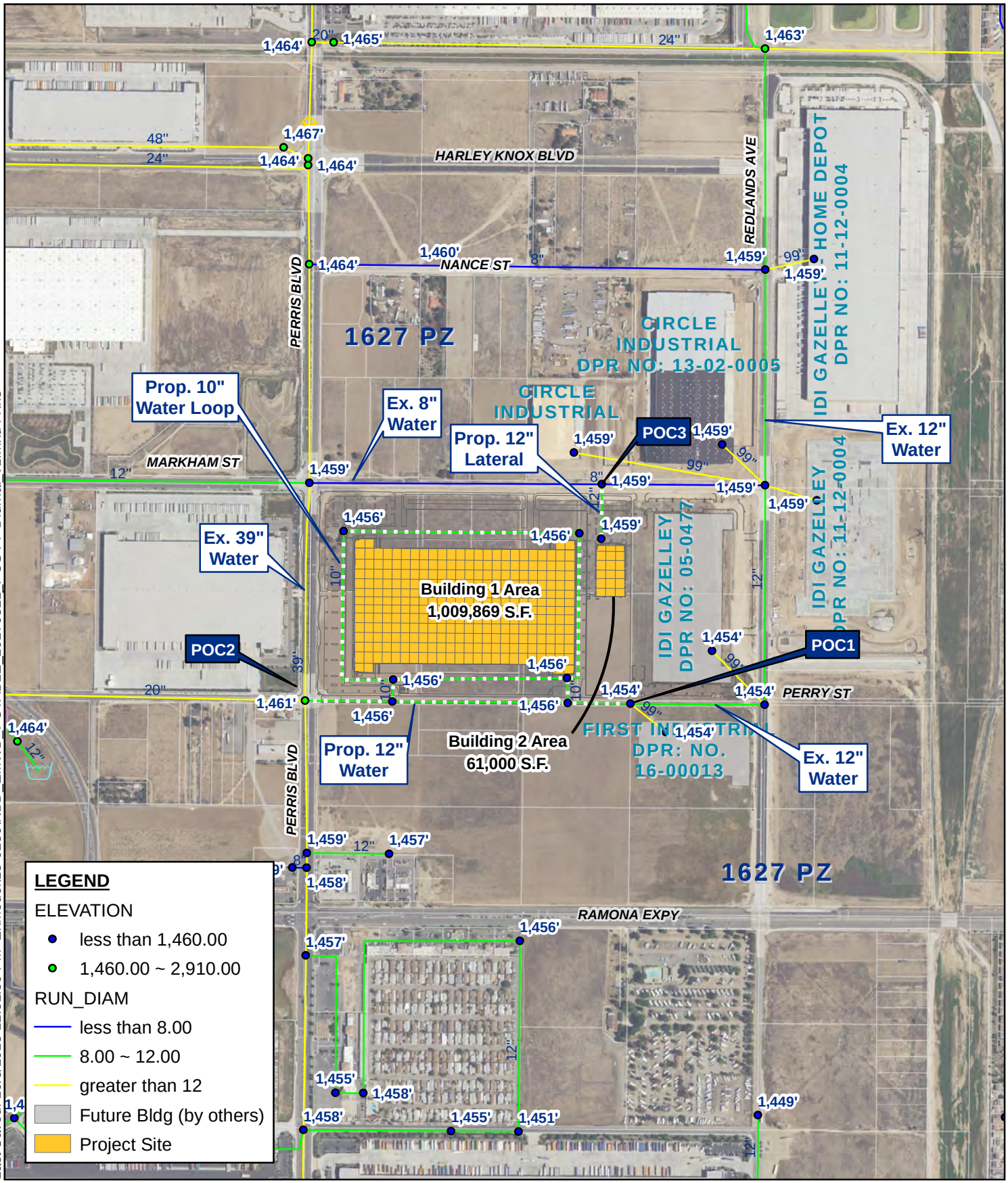
b. Measured at 20 psi residual pressure.

Building 2 will be type IIIB and about 61,000 sf. Fire sprinklers will be installed and a reduction of 50 percents was used for the fire flow requirement (2,625 gpm for 4 hrs).

The proposed Building 1 will be type IIIB and greater than 138,301 sf. Fire sprinklers will be installed and a reduction of 50 percents was used for the fire flow requirement (4,000 gpm for 4 hrs).

Appendix C
Hydraulic Analysis Modeling Results

ALBERT A. WEBB ASSOCIATES



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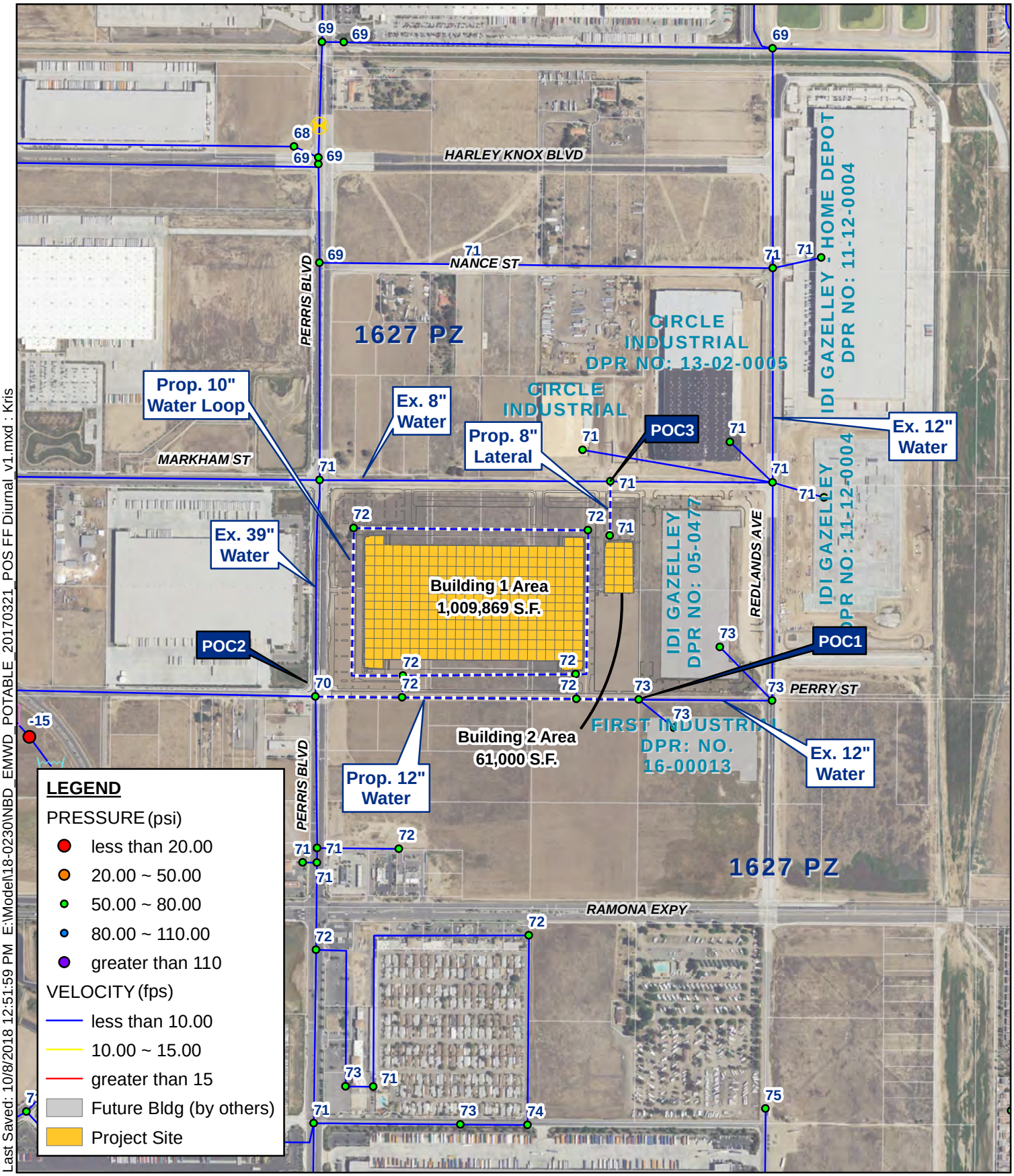
Source: Riverside Co. GIS, 2017
Scenario: EXIST_EPS_MDD_FF, HR30

FIGURE C0 - Elevation & Diameter
DUKE PERRIS INDUSTRIAL

ALBERT A. WEBB ASSOCIATES



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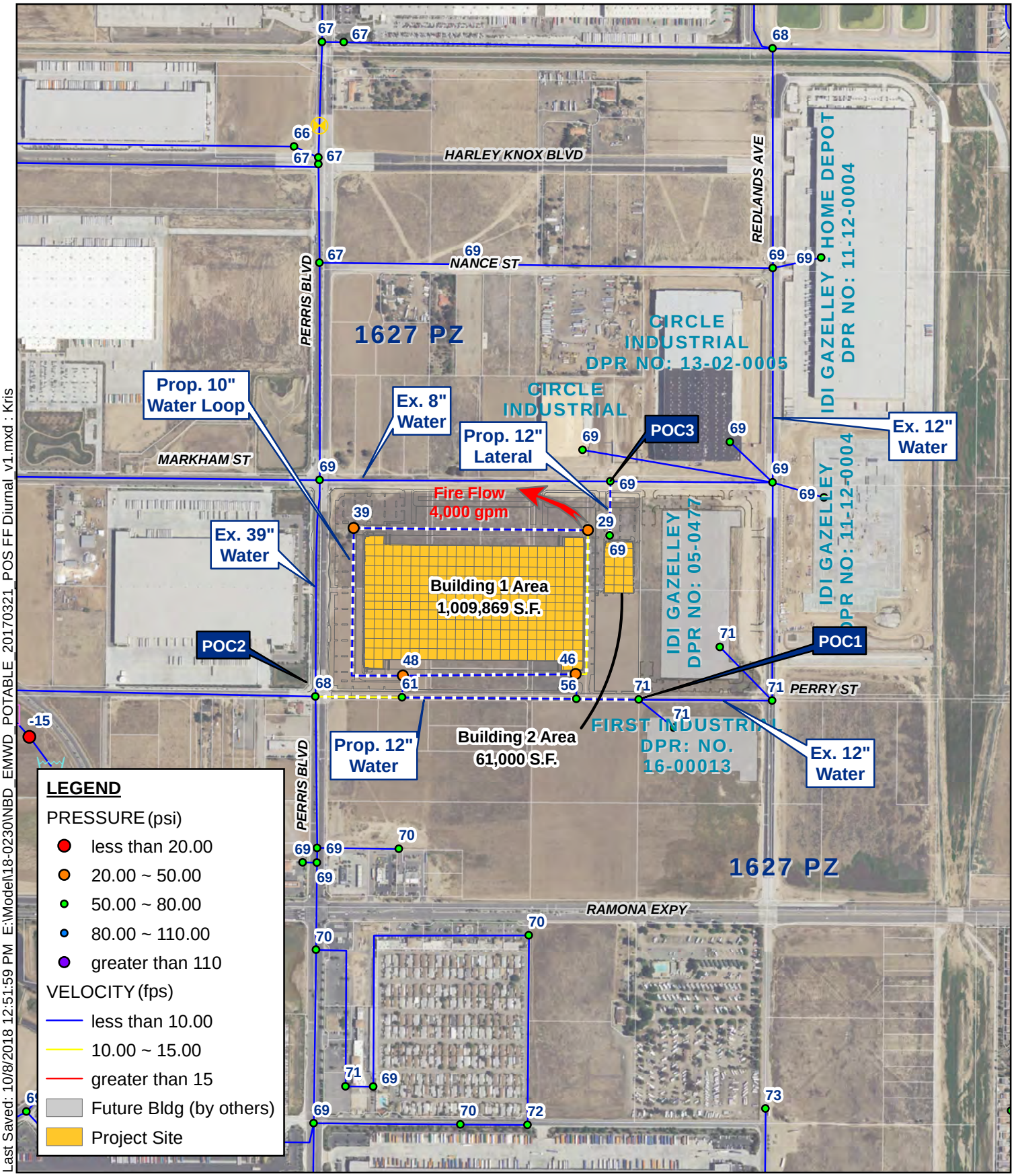
Source: Riverside Co. GIS, 2017
Scenario: EXIST_EPS_MDD_FF, HR28

FIGURE C1 - MDD
DUKE PERRIS INDUSTRIAL

ALBERT A. WEBB ASSOCIATES



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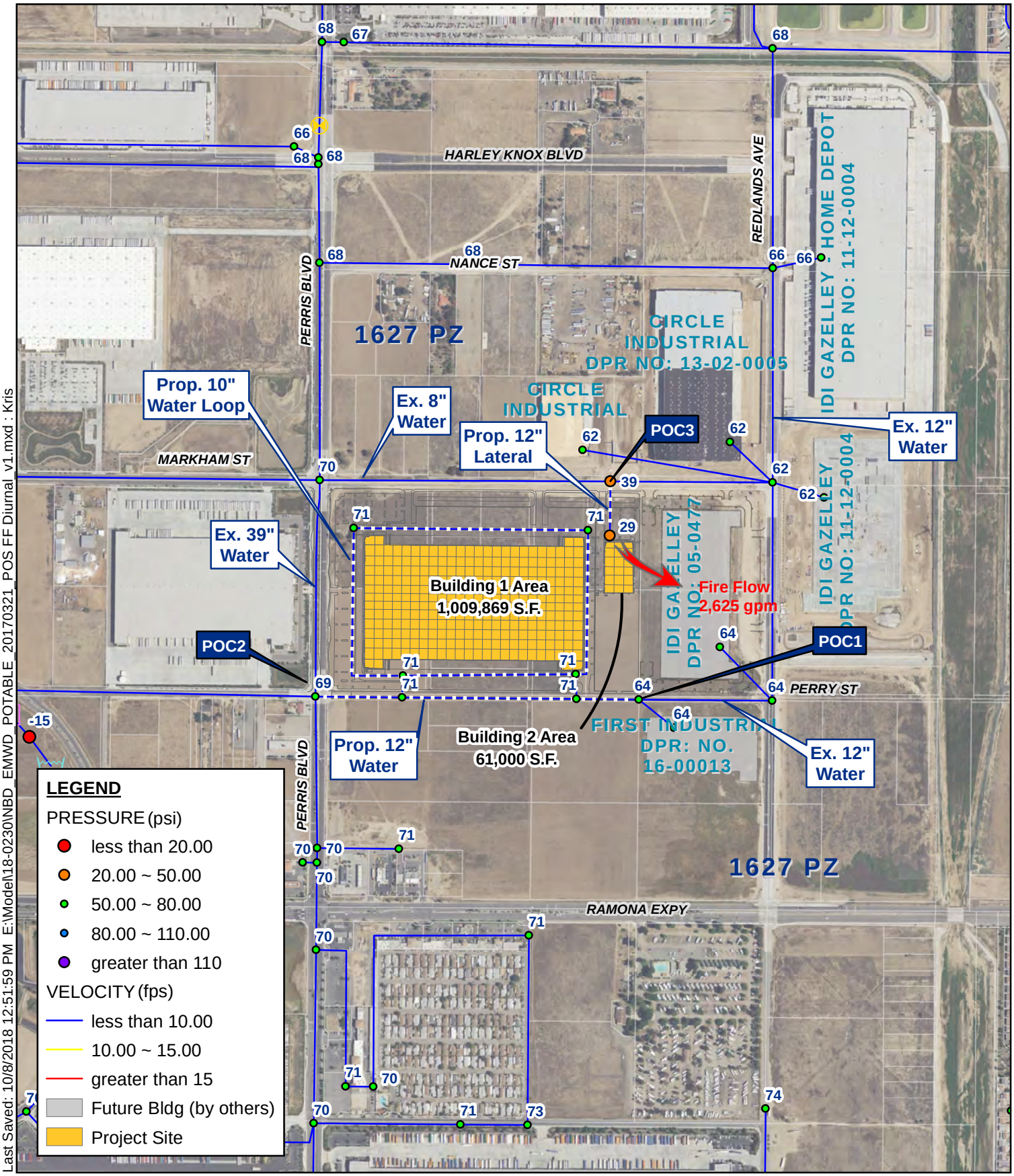
Source: Riverside Co. GIS, 2017
Scenario: EXIST_EPS_MDD_FF, HR42

FIGURE C2.1 - MDD+4,000 FF
DUKE PERRIS INDUSTRIAL

ALBERT A. WEBB ASSOCIATES



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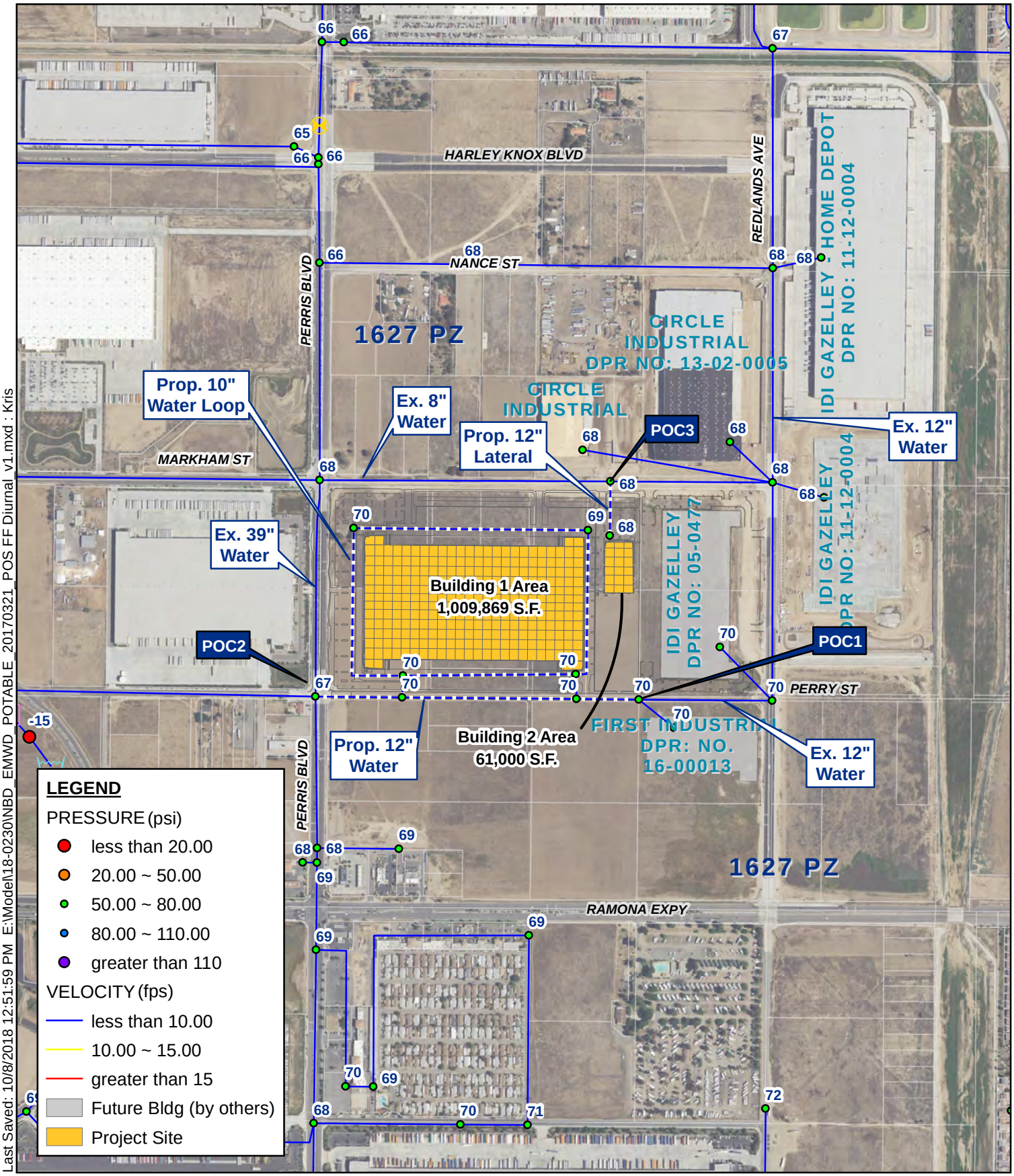
Source: Riverside Co. GIS, 2017
Scenario: EXIST_EPS_MDD_FF, HR42

FIGURE C2.2 - MDD+2,625 FF
DUKE PERRIS INDUSTRIAL

ALBERT A. WEBB ASSOCIATES



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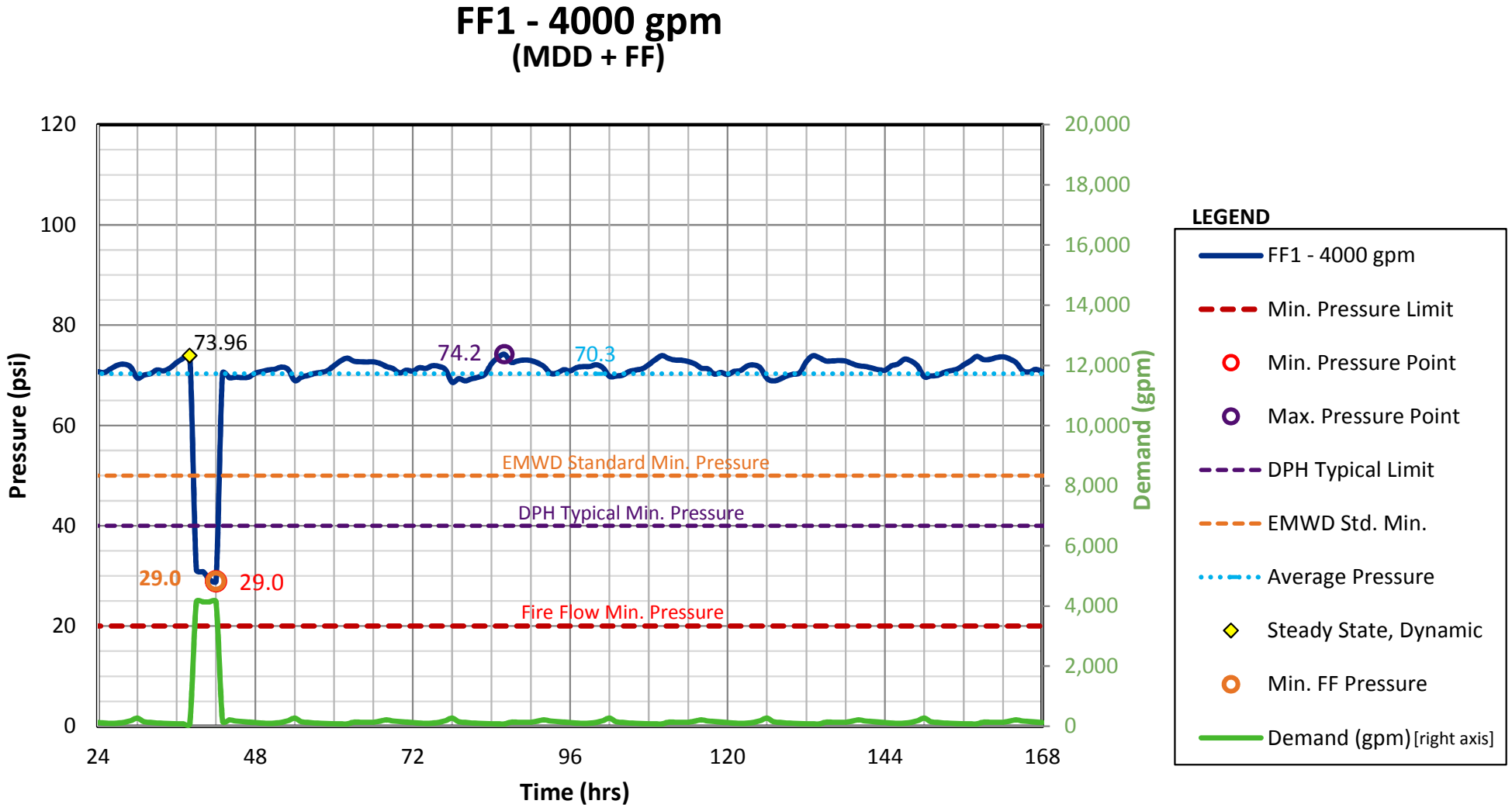
Source: Riverside Co. GIS, 2017
Scenario: EXIST_EPS_MDD_FF, HR30

FIGURE C3 - PHD
DUKE PERRIS INDUSTRIAL

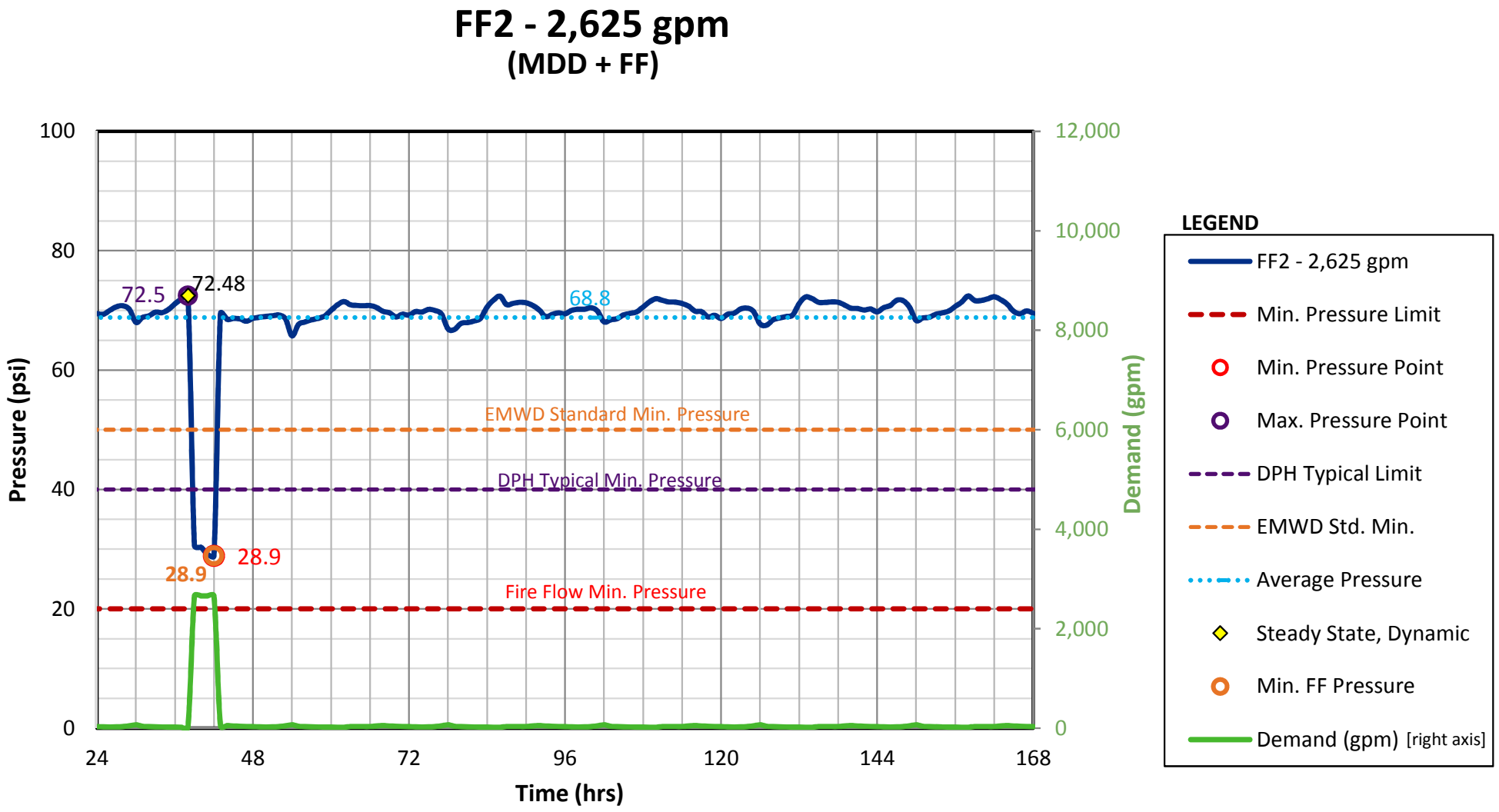
ALBERT A. WEBB ASSOCIATES

APPENDIX C



ALBERT A. WEBB ASSOCIATES

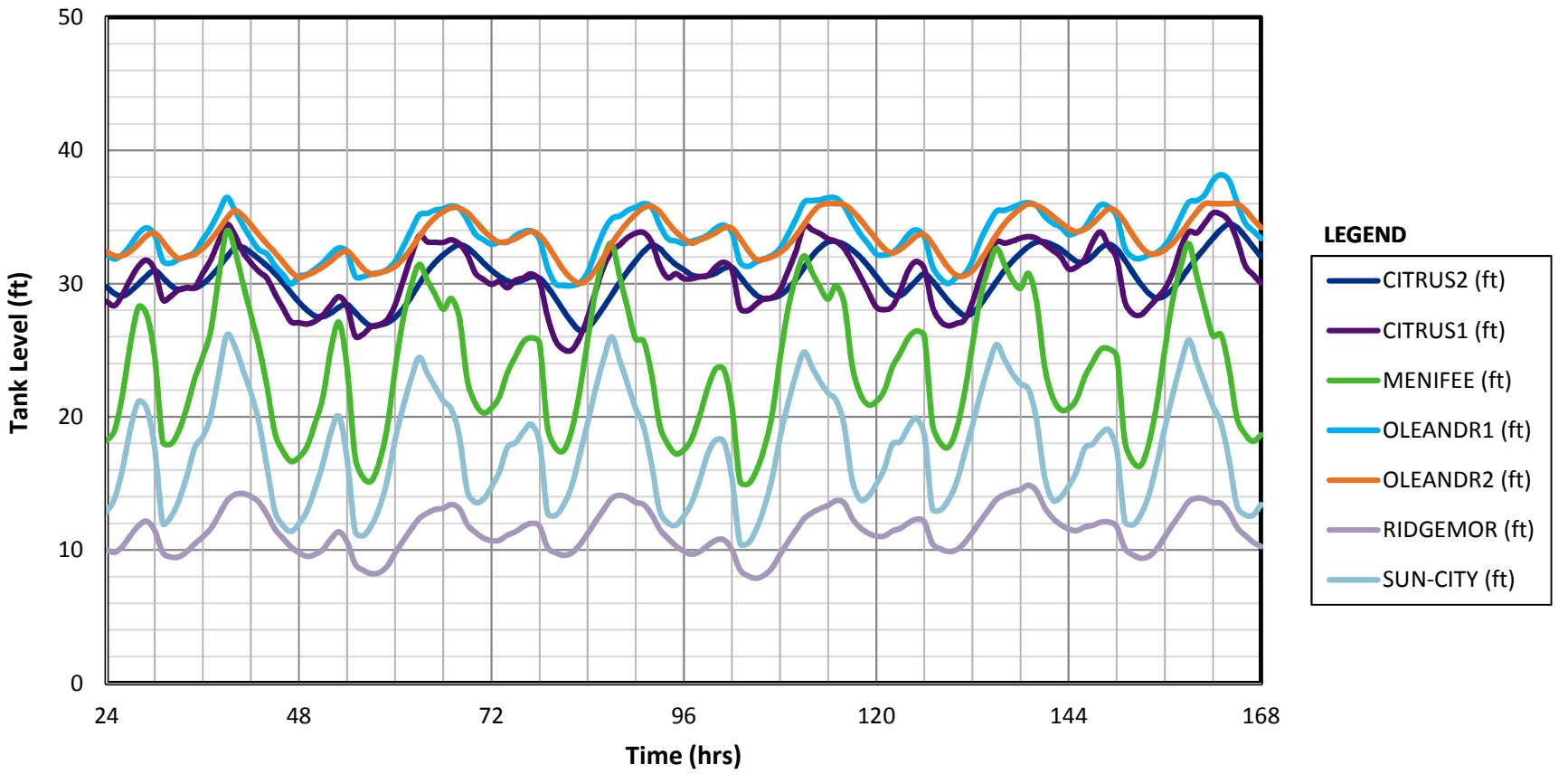
Figure C3.1



ALBERT A. WEBB ASSOCIATES

Figure C3.2

APPENDIX C



ALBERT A. WEBB ASSOCIATES

Figure C4

APPENDIX C

MDD EPS Mode Low Pressure Juctions (Hour 42)

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)	Notes:
SUN-TK	0	1,592.37	1,624.45	13.90	Near Tank
OLE-TNK1	0	1,598.09	1,623.29	10.92	Near Tank DAPVN
OLE-TAK	0	1,595.99	1,623.28	11.83	Near Tank DAPVN
DUR-END	1.98	1,584.69	1,622.39	16.33	Near top of hill DAPVS
N16795	0	1,464.00	1,430.00	-14.73	New Perry Well 56

POC1: MDD+4000 FF EPS Mode Low Pressure Juctions (Hour 40)

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)	Compared To First Table:
N16795	0	1,464.00	1,430.00	-14.73	-14.73
OLE-TNK1	0	1,598.09	1,622.97	10.78	10.92
OLE-TAK	0	1,595.99	1,622.97	11.69	11.83
SUN-TK	0	1,592.37	1,623.10	13.31	13.9
DUR-END	1.98	1,584.69	1,619.77	15.20	16.33

No New Junctions for FF

POC3: MDD+2625 FF EPS Mode Low Pressure Juctions (Hour 40)

ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)	Compared To First Table:
N16795	0	1,464.00	1,430.00	-14.73	-14.73
OLE-TNK1	0	1,598.09	1,621.46	10.12	10.92
OLE-TAK	0	1,595.99	1,621.49	11.05	11.83
SUN-TK	0	1,592.37	1,619.67	11.83	13.9
DUR-END	1.98	1,584.69	1,615.47	13.33	16.33

No New Junctions for FF

ALBERT A. WEBB ASSOCIATES

APPENDIX C

MDD+4000 FF1 High Velocity Pipes (Hour 42)

ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k-ft)
B0026P11	B0026SUC	**B0026P1**	1.00	12.00	150	7,098.88	**20.14**	0.07	73.36
B0026P12	B0026P1	**B0026DIS**	1.00	12.00	150	7,098.88	**20.14**	0.07	73.36
B0051P12	B0051P1	B0051DIS	1.00	18.00	150	9,500.01	11.98	0.02	17.46
PE1604	N4157	J_DUKE1	537.84	12.00	120	4,136.00	11.73	21.92	40.76
B4163P41	N10189	B4163P4	1.00	12.00	150	3,918.32	11.12	0.02	24.41
PE1610	J_DUKE-C	J_DUKE-D	957.59	10.00	120	-2,584.12	10.56	39.7	41.46
PE1607	J_DUKE1	J_DUKE-A	135.58	10.00	120	2,217.95	9.06	29.73	219.25
B0015P11	B0015SUC	B0015P1	1.00	12.00	150	3,121.89	8.86	0.02	16.11
PE1612	J_DUKE2	J_DUKE-D	153.68	10.00	120	1,918.05	7.84	22.73	147.91
DESALTER-1-2	FCV-DESALTER-1	DESALT-1	1	18.00	120	6,104.00	7.7	0.01	11.72

High velocities are at booster stations

MDD+2625 FF2 High Velocity Pipes (Hour 42)

ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k-ft)
B0026P11	B0026SUC	B0026P1	1.00	12.00	150	7,393.51	**20.97**	0.08	78.98
B0026P12	B0026P1	B0026DIS	1.00	12.00	150	7,393.51	**20.97**	0.08	78.98
B0051P12	B0051P1	B0051DIS	1.00	18.00	150	13,500.00	17.02	0.03	33.45
B0026P31	B0026SUC	B0026P3	1.00	12.00	150	5,396.13	15.31	0.04	44.07
B0026P32	B0026P3	B0026DIS	1.00	12.00	150	5,396.13	15.31	0.04	44.07
B4163P41	N10189	B4163P4	1	12.00	150	3,775.06	10.71	0.02	22.83
B0015P11	B0015SUC	B0015P1	1	12.00	150	3,070.36	8.71	0.02	15.5
DESALTER-1-1	N16797	FCV-DESALTER-1	1.00	18.00	120	6,104.00	7.7	0.01	11.72
DESALTER-1-2	FCV-DESALTER-1	DESALT-1	1	18.00	120	6,104.00	7.7	0.01	11.6
P23808	DESALTER-1	N16797	1	18.00	120	6,104.00	7.7	0.01	11.6

High velocities are at booster stations

ALBERT A. WEBB ASSOCIATES

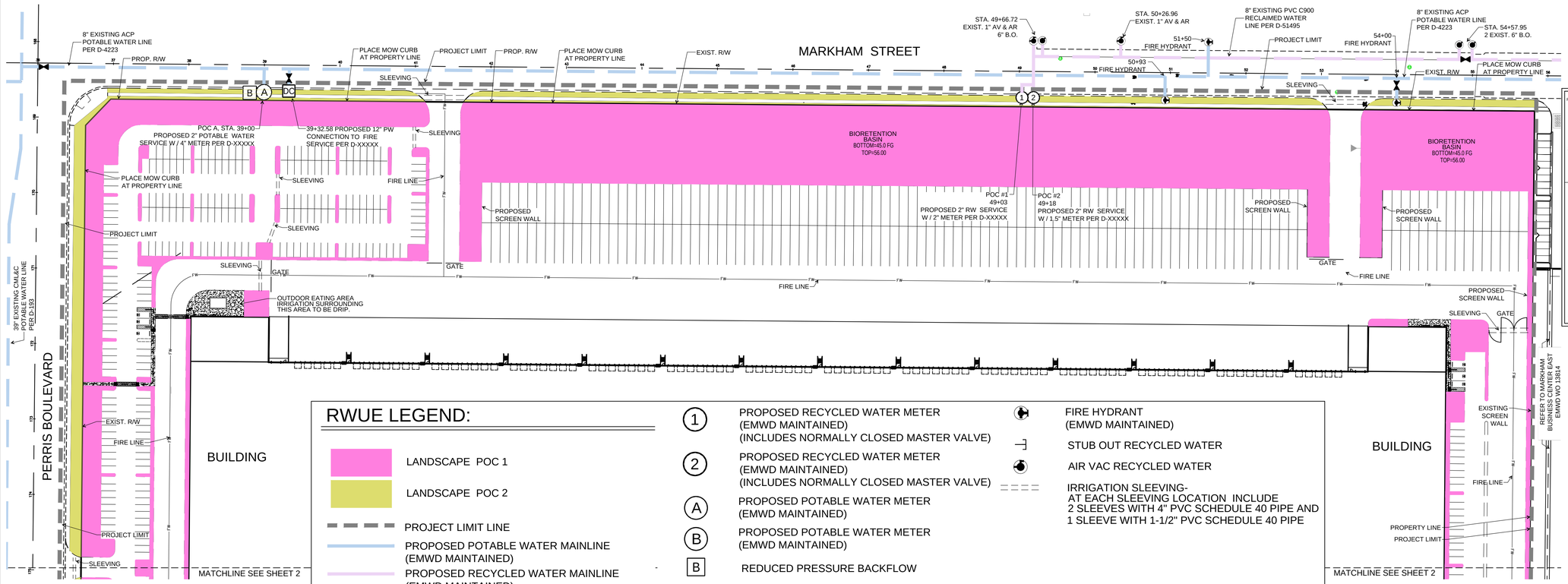
Appendix D
RWUE

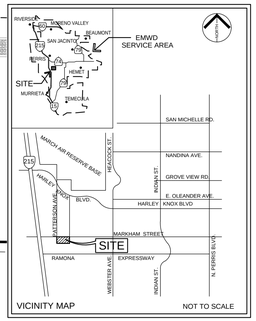
ALBERT A. WEBB ASSOCIATES

DUKE REALTY- PERRIS BOULEVARD & MARKHAM STREET

APN 302-120-004, 302-120-006, 302-120-011 THROUGH 302-120-022

WO 15851





0 30 60 180 NORTH

RWUE LEGEND:

- LANDSCAPE POC 1
- LANDSCAPE POC 2
- PROJECT LIMIT LINE
- PROPOSED POTABLE WATER MAINLINE (EMWD MAINTAINED)
- PROPOSED RECYCLED WATER MAINLINE (EMWD MAINTAINED)
- EXISTING POTABLE WATER MAINLINE (EMWD MAINTAINED)
- EXISTING RECYCLED WATER MAINLINE (EMWD MAINTAINED)
- FW — ON-SITE FIRE MAIN PROPOSED

- (1) PROPOSED RECYCLED WATER METER (EMWD MAINTAINED) (INCLUDES NORMALLY CLOSED MASTER VALVE)
- (2) PROPOSED RECYCLED WATER METER (EMWD MAINTAINED) (INCLUDES NORMALLY CLOSED MASTER VALVE)
- (A) PROPOSED POTABLE WATER METER (EMWD MAINTAINED)
- (B) PROPOSED POTABLE WATER METER (EMWD MAINTAINED)
- B REDUCED PRESSURE BACKFLOW
- DC DOUBLE CHECK DETECTOR ASSEMBLY (DC TYPE SHALL BE DETERMINED DURING PLAN CHECK)
- ISOLATION VALVE (EMWD MAINTAINED)
- BLOW OFF POTABLE (EMWD MAINTAINED)
- BLOW OFF RECYCLED (EMWD MAINTAINED)
- FIRE HYDRANT (EMWD MAINTAINED)
- STUB OUT RECYCLED WATER
- AIR VAC RECYCLED WATER
- IRRIGATION SLEEVING- AT EACH SLEEVING LOCATION INCLUDE 2 SLEEVES WITH 4" PVC SCHEDULE 40 PIPE AND 1 SLEEVE WITH 1-1/2" PVC SCHEDULE 40 PIPE

EMWD STANDARD RWUE NOTES

1. THE RWUE IS CONSIDERED A COMPONENT OF THE RECYCLED WATER LANDSCAPE IRRIGATION GUIDELINES.
2. EMWD'S REVIEW, ACCEPTANCE AND APPROVAL OF THE RWUE AND ASSOCIATED DOCUMENTS ARE FOR THE PURPOSES OF RECORD DOCUMENTATION, DATA ACQUISITION, AND COMPLIANCE WITH CALIFORNIA DEPARTMENT OF PUBLIC HEALTH (CDPH) TITLE 22, GOVERNING AGENCY(S) CONDITIONS AND EMWD RECYCLED WATER LANDSCAPE IRRIGATION GUIDELINES.
3. IT THE RESPONSIBILITY OF THE CIVIL ENGINEER TO COORDINATE WITH THE LANDSCAPE ARCHITECT IN DEVELOPING THE IRRIGATION DEMANDS AND FOR PROVIDING VERIFICATION OF AN INFRASTRUCTURE SYSTEM THAT WILL SUPPORT THIS PEAK SYSTEM DEMAND.
4. THIS PROJECT SITE IS CONDITIONED FOR THE MANDATORY USE OF RECYCLED WATER FOR LANDSCAPE IRRIGATION PURPOSES AND AS A RESULT THE PROPERTY OWNER IS RESPONSIBLE FOR ENSURING COMPLIANCE WITH THESE REQUIREMENTS FROM ALL TENANTS, LEASE HOLDERS, PROPERTY ASSOCIATIONS, OR ANY AND ALL OTHERS WITH ACCESS TO, OR USE OF THE PROJECT SITE.
5. PRIOR TO ANY CONSTRUCTION ACTIVITIES AND INSTALLATION OF ANY IRRIGATION SYSTEMS WHETHER PERMANENT, TEMPORARY OR INTERIM EMWD REQUIRES IRRIGATION PLAN SUBMITTAL, ACCEPTANCE, AND APPROVAL.
6. THE TIME LIMIT ON DRAWING ACCEPTANCE SHALL BE AS INDICATED IN THE EMWD RECYCLED WATER GUIDELINES AND AS INDICATED IN THE PROJECT CONDITIONS OF APPROVAL.

RWUE PROJECT STUDY AREA TABLE

Date: 4/25/18

APN# APN 302-120-004, 302-120-006, 302-120-011 THROUGH 302-120-022	Proposed Recycled Water Irrigation Plan (RWIP)	Meter Designation	Recycled and Potable Water Use Areas (Indicate the color used)	Initial Source of water supply	Water Type	Meter Location Street Name and Side	Station Number	EMWD D Sheet #	Land Use Type (Description)	Meter Size (Inches)	Service Line Size (Inches)	Water Meter Detail	Meter Elevation	Potable Service Zone	Recycled Service Area	Maintenance Entity	Meter Design Max Flow (GPM)	Irrigated Area Served (Acres)	Irrigated Area Served (Square Feet)	Percentage of Site Irrigated	Maximum Irrigation Peak Demand (GPM)	Maximum Irrigation Annual Water Use (Acre FT / Year)	Application Method	Watering Window
ON-SITE	BUILDING 1 onsite	1		RECYCLED	RECYCLED	MARKHAM	49+03	D-XXXXX	BASIN/ONSITE	2	2	PB-10A	1457'	1627	32	PRIVATE	75	6.18	269,138	10.9%	50	10.1	ROTATOR	9PM - 6AM
OFF-SITE	BUILDING 1 offsite	2		RECYCLED	RECYCLED	MARKHAM	49+18	D-XXXXX	STREETSCAPE	1.5	2	PB-10A	1457'	1627	32	CITY OF PERRIS	30	0.86	37,272	1.5%	4	0.82	DRIP	9PM - 6AM
BUILDING	NA	A	NA	POTABLE	POTABLE	MARKHAM	39+00	D-XXXXX	COMMERCIAL	2	4	B-344	1460'	1627	NA	PRIVATE	160	0	0	0%	0	0	NA	NA
BUILDING	NA	B	NA	POTABLE	POTABLE	PERRY	55+00	D-XXXXX	COMMERCIAL	2	4	B-344	1455'	1627	NA	PRIVATE	160	0	0	0%	0	0	NA	NA
															Gross Site Area (Acres)		56.5							
Owner: same as below		Contact:		RWUP SUMMARY	WO# XXXXX																			
Address:		Phone #:		Project Study Area:	NA										Potable Totals		320.00	0.00	0.00	%	0	0.00		
				Parcel:	NA																			
Developer: Duke Realty		Contact: Adam Schmid		Gross Site Area (acres):	56.50%										Recycled Totals		105.00	7.04	306,410.00	%	54	10.92		
Address: 200 Spectrum Center Dr; Ste 1600		Phone # 949-797-7000		Irrigated Area (acres):	12%										Difference from RWUP						#VALUE!			
Irvine, CA 92618				Max Peak Demand Allowed (GPM):	NA																			
				Max Demand Allowed (ACRE/FT/YR):	NA																			

DIG ALERT

Call: TOLL FREE 1-800-227-2600 OR 811

TWO FULL WORKING DAYS BEFORE YOU DIG

BASIS OF BEARINGS:

CALIFORNIA STATE PLANE COORDINATE SYSTEM, CCS83, ZONE 6, BASED LOCALLY ON CONTROL STATIONS "SANTA FE", AND " 40 Y" NAD 83(NSRS2011), #653 WITH COORDINATES OF : N 2252331.060, E: 6265288.220, USING AN ELEVATION OF 1454.22.

BENCH MARK

BENCH MARK: 40Y (PID #DX2103) -3" BRASS DISK , SET IN BOULDER, MARKED W/ TEE.

ELEVATION = 1494.66', NAVD 88

LOCATION: 4.5 MILES W OF LAKEVIEW. 200' SW OF BRADLEY RD AND WALNUT AVE INTERSECTION. 70' S OF WALNUT AVE CENTERLINE.

REGISTERED LANDSCAPE ARCHITECT — THOMAS K. HAYES — 3589 — Signature — 1/31/2019 — Date — STATE OF CALIFORNIA

HUNTER LANDSCAPE

711 S. Fee Ana Street
Placentia, California 92870-6706
Ph: 714.986.2400 Fax: 714.986.2408
Tom Hayes

DATE: 04-25-18
DRAWN BY: JA
CHECKED BY: TH

REVISIONS

DATE	BY	MARK	DESCRIPTION	APPR.	DATE
			ENGINEER	EMWD	

ACCEPTED BY:

EASTERN MUNICIPAL WATER DISTRICT

NEW BUSINESS DEVELOPMENT CIVIL ENGINEER — DATE

DEPARTMENT	ACCEPTANCE	DATE
NEW BUSINESS P.C.		
OPERATIONS		
ENGINEERING		
POS ENGINEER		

CITY OF PERRIS

RWUE
APN# 302-120-004, 302-120-006, 302-120-011 through 302-120-022

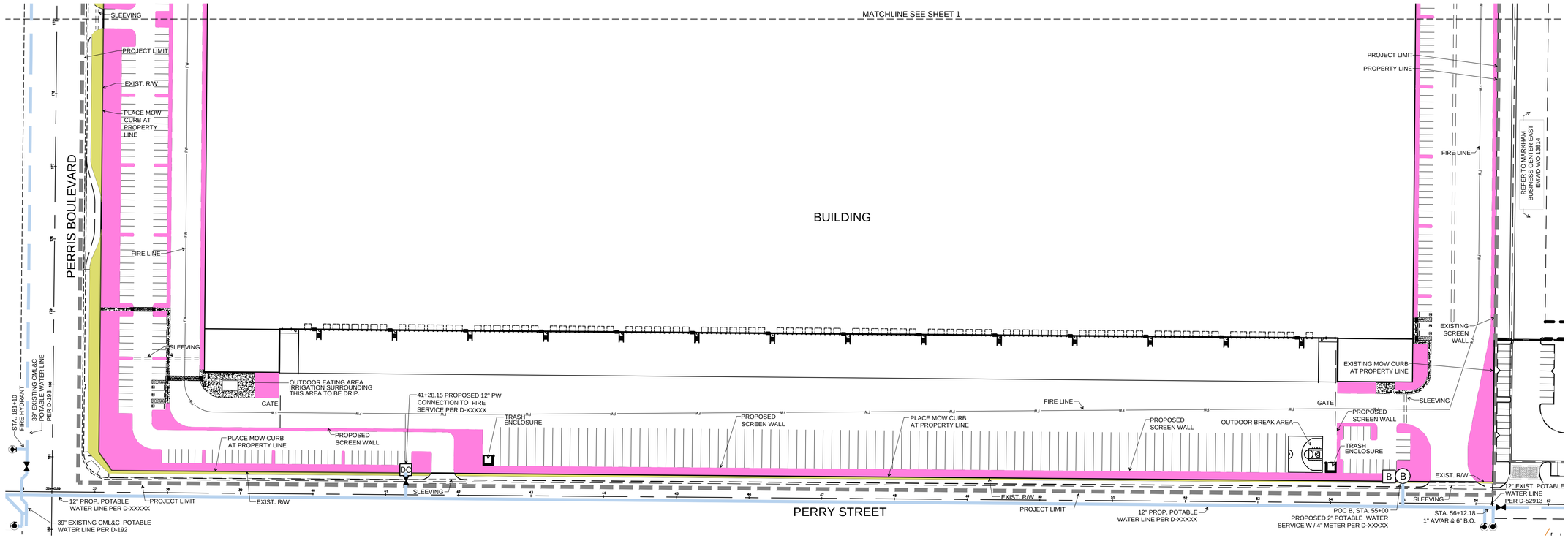
RECYCLED WATER USE IMPROVEMENTS FOR DUKE REALTY - PERRIS BLVD AND MARKHAM ST

	WO:
	PCWO:
DOPP. 000	RWUE: 15851
COORD. 49-D-38	RWUP:
I.D. 98	SHT. 1 OF 2
S.A. 32	D-

DUKE REALTY- PERRIS BOULEVARD & MARKHAM STREET

APN 302-120-004, 302-120-006, 302-120-011 THROUGH 302-120-022

WO 15851



RWUE LEGEND:

- LANDSCAPE POC 1
- LANDSCAPE POC 2
- PROJECT LIMIT LINE
- PROPOSED POTABLE WATER MAINLINE (EMWD MAINTAINED)
- PROPOSED RECYCLED WATER MAINLINE (EMWD MAINTAINED)
- EXISTING POTABLE WATER MAINLINE (EMWD MAINTAINED)
- EXISTING RECYCLED WATER MAINLINE (EMWD MAINTAINED)
- FW — ON-SITE FIRE MAIN PROPOSED
- (1) PROPOSED RECYCLED WATER METER (EMWD MAINTAINED) (INCLUDES NORMALLY CLOSED MASTER VALVE)
- (2) PROPOSED RECYCLED WATER METER (EMWD MAINTAINED)
- (EMWD MAINTAINED) (INCLUDES NORMALLY CLOSED MASTER VALVE)
- (A) PROPOSED POTABLE WATER METER (EMWD MAINTAINED)
- (B) PROPOSED POTABLE WATER METER (EMWD MAINTAINED)
- [B] REDUCED PRESSURE BACKFLOW
- [DC] DOUBLE CHECK DETECTOR ASSEMBLY (DC TYPE SHALL BE DETERMINED DURING PLAN CHECK)
- ISOLATION VALVE (EMWD MAINTAINED)
- BLOW OFF POTABLE (EMWD MAINTAINED)
- BLOW OFF RECYCLED (EMWD MAINTAINED)
- FIRE HYDRANT (EMWD MAINTAINED)
- STUB OUT RECYCLED WATER
- AIR VAC RECYCLED WATER
- IRRIGATION SLEEVING- AT EACH SLEEVING LOCATION INCLUDE 2 SLEEVES WITH 4" PVC SCHEDULE 40 PIPE AND 1 SLEEVE WITH 1-1/2" PVC SCHEDULE 40 PIPE

EMWD STANDARD RWUE NOTES

1. THE RWUE IS CONSIDERED A COMPONENT OF THE RECYCLED WATER LANDSCAPE IRRIGATION GUIDELINES.
2. EMWD'S REVIEW, ACCEPTANCE AND APPROVAL OF THE RWUE AND ASSOCIATED DOCUMENTS ARE FOR THE PURPOSES OF RECORD DOCUMENTATION, DATA ACQUISITION, AND COMPLIANCE WITH CALIFORNIA DEPARTMENT OF PUBLIC HEALTH (CDPH) TITLE 22, GOVERNING AGENCY(S) CONDITIONS AND EMWD RECYCLED WATER LANDSCAPE IRRIGATION GUIDELINES.
3. IT THE RESPONSIBILITY OF THE CIVIL ENGINEER TO COORDINATE WITH THE LANDSCAPE ARCHITECT IN DEVELOPING THE IRRIGATION DEMANDS AND FOR PROVIDING VERIFICATION OF AN INFRASTRUCTURE SYSTEM THAT WILL SUPPORT THIS PEAK SYSTEM DEMAND.
4. THIS PROJECT SITE IS CONDITIONED FOR THE MANDATORY USE OF RECYCLED WATER FOR LANDSCAPE IRRIGATION PURPOSES AND AS A RESULT THE PROPERTY OWNER IS RESPONSIBLE FOR ENSURING COMPLIANCE WITH THESE REQUIREMENTS FROM ALL TENANTS, LEASE HOLDERS, PROPERTY ASSOCIATIONS, OR ANY AND ALL OTHERS WITH ACCESS TO, OR USE OF THE PROJECT SITE.
5. PRIOR TO ANY CONSTRUCTION ACTIVITIES AND INSTALLATION OF ANY IRRIGATION SYSTEMS WHETHER PERMANENT, TEMPORARY OR INTERIM EMWD REQUIRES IRRIGATION PLAN SUBMITTAL, ACCEPTANCE, AND APPROVAL.
6. THE TIME LIMIT ON DRAWING ACCEPTANCE SHALL BE AS INDICATED IN THE EMWD RECYCLED WATER GUIDELINES AND AS INDICATED IN THE PROJECT CONDITIONS OF APPROVAL.

NORTH

0 30 60 180

DIG ALERT

CALL BEFORE YOU DIG

Call: TOLL FREE 1-800-227-2600 OR 811

TWO FULL WORKING DAYS BEFORE YOU DIG

BASIS OF BEARINGS:

CALIFORNIA STATE PLANE COORDINATE SYSTEM, CCS83, ZONE 6, BASED LOCALLY ON CONTROL STATIONS "SANTA FE", AND " 40 Y" NAD 83(NSRS2011). #653 WITH COORDINATES OF : N: 2252331.060, E: 6265288.220, USING AN ELEVATION OF 1454.22.

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711 S. Fee Ana Street
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Ph: 714.986.2400 Fax: 714.986.2408
Tom Hayes

DATE: 04-25-18
DRAWN BY: JA
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REVISIONS						
DATE	BY	MARK	ENGINEER	DESCRIPTION	APPR.	DATE EMWD

ACCEPTED BY:
EASTERN MUNICIPAL WATER DISTRICT
NEW BUSINESS DEVELOPMENT CIVIL ENGINEER — DATE

DEPARTMENT	ACCEPTANCE	DATE
NEW BUSINESS P.C.		
OPERATIONS		
ENGINEERING		
POS ENGINEER		

CITY OF PERRIS

RWUE
APN# 302-120-004, 302-120-006, 302-120-011 through 302-120-022

RECYCLED WATER USE IMPROVEMENTS FOR
DUKE REALTY - PERRIS BLVD AND MARKHAM ST

WO:
PCWO:
DOPP. 000 RWUE: 15851
COORD. 49-D-38 RWUP:
I.D. 98 SHT 2 OF 2
S.A. 32 D-

Appendix E
Development Design Conditions

ALBERT A. WEBB ASSOCIATES

Developoment Service Department (DSD)

DEVELOPMENT DESIGN CONDITIONS (DDC)

******* NOTE TO APPLICANT: To fill out this form, please ensure that you are utilizing the latest design guidelines, noted below: *******

- EMWD's "Water System Planning & Design" guidelines, Updated Feb 2006, and revised Sep 14, 2006 (Contact Development Services Dept. (DSD) Engineer to obtain the latest Master Plan supplement)
- EMWD's "Sanitary Sewer System Planning & Design" guidelines, Updated Feb 1993, and revised Sep 1, 2006 (Contact Development Services Dept. (DSD) Engineer to obtain the latest Master Plan supplement)

- Applicant to complete Gray sections - EMWD to complete Yellow/White sections -

Form No: *DSD-045*

I. PROJECT INFORMATION

City View Reference No.:	
DDC - Work Order:	
Plan Check - Work Order:	
Grid Partition:	
ID (W/S):	

Is LAFCO Fringe Annexation Required?	☐ Yes ☐ No
Was LAFCO Fringe Annexation Approved?	☐ Yes ☐ No
Project to be transferred to AFS, upon DDC approval?	☐ Yes ☐ No

Project Name: [a] Duke Perris (APN 302-120-004, -006, & -011 through -022)

Cross Streets: Perris Blvd & Markham St

(a) Include TTM, TR, PM, SP, APN or other applicable number or name

Existing land use	Proposed Land Use	Acres	# of Units, or Hotel Bedrooms	Building Area (SF)	# of Students	# of Hospital Beds, or Dialysis Seats	Average Flow (GPD)
	Residential, Rural						
	Residential, Low Density (SFR)						
MDR	Residential, Medium Density (SFR)						
	Residential, Condominiums						
	Residential, Apartments						
	Residential, Age Restricted						
	Residential, Mobile Home Park						
	School						
	Educational: College						
	Church						
	Motel/Hotel						
	Hospital						
	Medical Office Building (offices)						
	Medical Office Building (long term care)						
	Medical Office Building (Dialysis)						
	Mixed Use Policy Area						
	Commercial, Retail						
	Commercial, Office						
	Industrial, Light						
	Industrial, Light (Warehouse)	55.7					
	Industrial, Heavy						
	Open Space, Rural						
	Open Space, Agricultural						
MDR	Open Space, Conservation						
MDR	Open Space, Recreation (Park)						
MDR	Other						
	Totals:	**55.7**	**0**	**0**	**0**	**0**	**0**

II. COMMUNITY FACILITIES DISTRICT (CFD)

Is this Project in a Facilities CFD ?	☐ Yes ☑ No
Is This Project in a Fees Only CFD ?	☐ Yes ☑ No

If yes, what is the lead agency: EMWD ☐ Yes ☐ No

Other:

DEVELOPMENT DESIGN CONDITIONS (DDC)

- Applicant to complete Gray sections - EMWD to complete Yellow/White sections -

Form No: *DSD-045*

III. WATER DEMAND AND SEWER FLOW ASSESSMENT

				POTABLE WATER					*SEWER*		
AREA DESCRIPTION	LAND USE	AREA SIZE		DEMAND PROJECTIONS			PEAK FACTOR		FLOW PROJECTIONS		
		AC	DU	(GAL/AC)	(GAL/EDU)	ADD	MDD	PKHR	(GAL/AC)	(GAL/EDU)	ADWF
1	Park				440	0				235	0
2	MDR				440	0				235	0
	M/HDR				400	0				212	0
	HDR				310	0				165	0
	Commercial/Office	55.7		2,200		122,540			1,700		94,690
	Light Industrial / Warehouse			550		0			1,700		0
	Mixed Use Policy Area			2,200		0			1,700		0
							2.0	2.0		ADWF TOTAL (GPD)	94,690
					TOTAL (GPD)	122,540	245,080	490,160		ADWF TOTAL (GPM)	66
					TOTAL (GPM)	85	170	340		PEAK FACTOR [a]	2.87
										PDWF - PEAK FLOW (GPD)	271,760
										PDWF - PEAK FLOW (GPM)	189

Use Drop Down List

IRRIGATION [b]				POTABLE WATER				
AREA DESCRIPTION	LAND USE	AREA SIZE		DEMAND ASSMT.			PEAK FACTOR	
		AC	DU	(GAL/AC)	(GAL/EDU)	ADD	MDD	PKHR
Onsite	Landscape	2.98		2,200		6,556	2.5	
						0		
					TOTAL (GPD)	6,556	16,390	
					TOTAL (GPM)	5	11	

(a) Sewer Peak Factor:
1- Use PF of 3.0 for Temecula Wine Country, Old Town Temecula, or similar hospitality type of use.
2- All other cases, PF is based on the following equation, PF = 2.13 $Q^{-0.13}$, where Q is ADWF in MGD,
3- Use max PF of 2.87, and Min PF of 1.5

IV. WATER SUPPLY

Is Water Supply Analysis Required?	☐ Yes ☑ No	
Water Supply Analysis Issued?	☐ Yes ☑ No	Date Issued:

Developoment Service Department (DSD)

DEVELOPMENT DESIGN CONDITIONS (DDC)

- Applicant to complete Gray sections - EMWD to complete Yellow/White sections -

Form No: *DSD-045*

V. WATER PRESSURE

Pressure Zone: 1627 HWL **Pressure Conditions (in the main pipeline):** ☐ High ☑ Normal ☐ Low

Notes: Only for Residential lots, Plan checker shall utilize the attached service-pressure table(s) to determine pressure conditions for each lot, and cause the recordation of High or Low pressure conditions if applicable: Low Pressure Agreement is required for pressures<40 psi; High Pressure Agreement is required for pressures>80 psi; and Lots with pressures <50 psi shall receive a minimum of 1.5" laterals.

VI. Fire Flow Demand

Has applicant received a fire flow letter or fire flow test by EMWD: ☐ Yes ☑ Waiting for result ☐ Need to request

Did it meet the fire flow demand: ☑ Yes ☐ No

Fire flow demand (GPM): 4000 **(GPM)**

Fire flow duration (HRS): 4 **(HRS)**

Have we received a copy of Fire Flow Conditions or onsite private calcs: ☑ Yes ☐ No Comment:

Note: -Estimated for planning purposes (at a 20 psi residual pressure). Actual fire flow and duration will be established by the governing Fire Marshall.

VII. WATER TRANSMISSION

Nearest Pipeline Facility w/Capacity: 8-inch diameter waterline in Markham St fronting the proposed development to the north
39-inch diameter waterline in Perris Blvd fronting the proposed development to the west
12-inch diameter waterline in Perry St fronting the proposed development at the southeast corner

☐ Not requesting Water Service

VIII. WATER FACILITY REQUIREMENTS [e]

	Onsite/Offsite	Dia (in)	Length (lf)[f]	Location		Limits		Size needed by Project (in)
Pipeline:	Onsite	10	5,600	Around Building		Onsite loop around proposed building with two connections to Perry St		10
Pipeline:	Offsite	12	2000	Perry St		From the existing 12" waterline in Perry to the 39" waterline in Perris Blvd		12
Pipeline:	Onsite	12	350	Building 2 Lateral		From 8" in Markham St to Building 2		12
	Onsite/Offsite	**Size**	**Unit**	Easement	Grant Deed	Abandonment Deposit Am't	**Location**	
Booster Plant:								
Storage Tank:								
Temporary Pipeline Alignment:				☐ Yes	☐ Yes			
Implementing facility:								

Notes:
1- The Planning & Design Criteria used for this DDC are: "Water System Planning & Design" guidelines, Updated Feb 2006, and revised Sep 14, 2006, supplemented by the 2015 Water Facilities Master Plan criteria (Chapter 5).
2 - Two points of connection with DCDA's are proposed for the laterals off of the 12-inch diameter waterline in Perry St for Building 1. One point of connection with a DCDA off of Markham St is needed for Building 2. Both buildings will have fire pumps.

(e) Include attachments (such as hydraulic calculations, maps, etc.) when necessary
(f) Approximate lengths for planning purposes only

DEVELOPMENT DESIGN CONDITIONS (DDC)

- Applicant to complete Gray sections - EMWD to complete Yellow/White sections -

Form No: *DSD-045*

IX. SEWER TREATMENT

Location:

Remaining Available Capacity?:	☐ Yes	☐ No
Is the project within 1/4 mile from the Treatment Plant?	☐ Yes	☐ No

If yes, a notification letter shall be recorded against each of the lots.

X. SEWER COLLECTION

Nearest Pipeline Facility w/Capacity: 10-inch diameter sewer line in Markham St fronting the proposed development to the north
10-inch diameter sewer line in Perris Blvd fronting the proposed development to the west

☐ Not requesting Sewer Service

XI. SEWER FACILITY REQUIREMENTS [g]

	Onsite/Offsite	Dia (in)	Length (lf)[h]	Location	Limits	Size needed by Project
Pipeline:	None					
Pipeline:						
Pipeline:						
Pipeline:						

	Onsite/Offsite	Size (gpm)	Interim/Perm	Easement	Grant Deed	Abandonment Deposit Am't	Location	
Lift Station[i][j][k]:				☐ Yes	☐ Yes			

Implementing facility:

Notes: 1- The Planning & Design Criteria used for this DDC are: "Sanitary Sewer System Planning & Design" guidelines, Updated Feb 1993, and revised C115Sep 1, 2006, supplemented by the 2015 Waste Water Facilities Master Plan criteria (Appendix 3A).

(g) Include attachments (such as special studies, maps, etc.) when applicable
(h) Approximate lengths for planning purposes only
(i) If interim, describe method and timing of abandonment, and include Demolition and Abandonment plans during Plan Check. Customer is responsible for Abandonment cost.
(j) If applicant is proposing a Lift Station (either temporary or permanent): Submit a study justifying this use, identifying all other options and why they are not viable.
The study shall include a grading analysis of quantities and cost.
For a proposed temporary Lift Station, the study shall identify an abandonment plan, including plans and calculations, to demonstrate the feasibility of the abandonment.
(k) Proposed Lift Stations shall be presented for consideration by the Waste Water Enterprise Team prior to considering the DDC approval.

DEVELOPMENT DESIGN CONDITIONS (DDC)

- Applicant to complete Gray sections - EMWD to complete Yellow/White sections -

Form No: *DSD-045*

XII. RECYCLED WATER TRANSMISSION

Nearest Pipeline Facility w/Capacity: 8-inch recycled waterline in Markham St fronting the proposed development to the north
8-inch implementing recycled waterline (WO-12345) at the southeast corner of the development in Perry St, under construction

XIII. RECYCLED WATER FACILITY REQUIREMENTS [j] (RWUE and/or RWUP)

	Onsite/Offsite	Dia (in)	Length (lf)[k]	Location	Limits	Size needed by Project
Pipeline:	Offsite	8	1900	Perry St	Fronting property on Perry Street between Perris Blvd and Redlands Ave.	8
Pipeline:						
Pipeline:						

	Onsite/Offsite	Size	Unit	Easement	Grant Deed	Abandonment Deposit Am't	Location
Temporary Inter-Tie				☐ Yes	☐ Yes		
Booster Plant:							
Storage Tank:							

Implementing facility: 8-inch implementing recycled waterline (WO-12345) at the southeast corner of the development in Perry St

Notes[l]: Service laterals will connect to the proposed 8-inch diameter recycled waterline in Perry St to the south side of the project.

(j) Include attachments (such as hydraulic calculations, maps, etc.) when necessary
(k) Approximate lengths for planning purposes only
(l) RWUP: has it been completed ? ☐ Yes ☐ No ☐ N/A
RWUE: has it been completed ? ☐ Yes ☐ No ☐ N/A

Comments:

XIV. FRONTAGE [m]

Water/Sewer/Rcld	Description/General Location	Existing Frontage Memo #	Type [n,o]	Length (lf)	$ Amt/lf	Total
						$0
						$0
						$0
						$0

(n) "Potentially Reimbursable" means: Potentially Reimbursable to project sponsor, in accordance with EMWD Admin Code as amended.
(o) "Non-Reimbursable" means: Payment by this applicant to reimburse original sponsor of facilities

Estimated for budgetary purposes only

(m) *Special Funding / Agreement Area:* ☐ Yes ☐ No
(If Yes) Name of Area:

Signature (EMWD-FRONTAGE) **Date**

DEVELOPMENT DESIGN CONDITIONS (DDC)

- Applicant to complete Gray sections - EMWD to complete Yellow/White sections -

Form No: *DSD-045*

XV. FINANCIAL PARTICIPATION CHARGES [m]

S.O. by DSD Representative? ☐ Yes ☐ No *If 'Yes', please coordinate with a Development Services Representative for preparation of an Application For Service*

XVI. ESTIMATE CONNECT FEES FOR APPLICANT BENEFIT

All connection fees can be estimated via our EMWD website.

Visit http://www.emwd.org/new_biz/construction_fee-schedule.html for our complete fee schedule.

XVII. DDC APPROVAL TIME LIMITATION

This Development Design Conditions approval is valid for 24 months. From the time the DDC is approved and until preparation of the Standard Facilities Agreement, this DDC shall be subject to further evaluation if any of the following conditions exist:

a- The project's scope of work has changed substantially from the approved DDC, causing the need to re-evaluate the proposed facilities

b- New regulatory requirements are in effect

c- EMWD has significant updates to its Facilities Master Plans/CIP program, and Design Criteria

Developoment Service Department (DSD)

DEVELOPMENT DESIGN CONDITIONS (DDC)

- Applicant to complete Gray sections - EMWD to complete Yellow/White sections -

Form No: *DSD-045*

XVIII. SPECIAL CONDITIONS: **For Conditions 1 and 2, please select one of the choices from the Drop-Down List - For all others, do NOT delete the ones that do not apply, instead, cross them out.**

1- Use The Drop Down List	At the time this POS was processed, final Conditions Of Approval (COAs) were not available: Therefore, the COAs shall be provided prior to submittal of Plan Check.
2- Use The Drop Down List	To qualify for oversizing reimbursement, the sponsor shall provide EMWD with three prevailing-wage bid comparisons following Plan Approval, subject to review by staff, recommendation to, and approval by, the Board of Directors. Only after such review and approval can the sponsor proceed to the Standard Agreement phase. Oversizing of EMWD facilities shall be performed with prevailing-wage contracting (see attachment for EMWD's Prevailing-wage requirements and authorization process description)
3-	It is the applicant's responsibility to provide any updates or revisions to the Project COA during the development, or after the approval, of the DDC. The DDC shall be revised and updated as needed: Failure to provide timely COA updates or revisions may result in potential additional facility requirements and/or delays in processing the project during subsequent phases (such as Plan Check or Agreement phases).
4-	(Only for Residential lots) Plan checker shall utilize the attached service-pressure table(s) to determine pressure conditions for each lot, and cause the recordation of High or Low pressure conditions if applicable: **Low Pressure Agreement** is required for lot pressures <40 psi; **High Pressure Agreement** is required for lot pressures >80 psi; and Lots with pressures <50 psi shall receive a **minimum of 1.5" service laterals**.
5-	The project lies within the _____ Special Benefit Area, and is subject to additional connection fees.
6-	(For residential landscaping fed from a potable water source) At FIRST Plan Check, a "Residential Landscaping Water Budget" form shall be completed and submitted (by a Licensed Civil Engineer or a Licensed Landscape Architect). This form will be reviewed by the Conservation Dept. during the Plan Check phase. A final approval of this form is required by EMWD's Conservation Dept., prior to EMWD's facilities "Release" by the Inspection Department.
7-	To submit for Plan Check of final design, the applicant shall refer to the Plan Check Submittal Checklist (attached). The Plan Check submittal shall include the appropriate Plan Check deposit in order for it to be considered complete.
8-	If this project requires Implementing Facilities, then such Implementing Facilities shall be concurrently in Plan Check with this project's Plan Check.
9-	For design of all pumping facilities: Provide design capacity, and preliminary site plan and pipeline alignments for DDC approval. Final design shall be reviewed during Plan Check. If a an interim Lift Station is proposed, customer shall include Demolition and Abandonment plans during Plan Check.
10-	Design and install a potable-water sampling station per standard detail B-935, to be located within the project and as designated during the Plan Check review.
11-	The project is located within 1/4 mile from an existing EMWD waste water treatment plant, and therefore a notification letter shall be recorded against each of the lots, prior to occupancy.
12-	
13-	

XIX. LIST OF APPLICABLE ATTACHMENTS & REFERENCES: **(do NOT delete Attachments & References that do not apply, instead, cross them out).**

1- Project Vicinity Map
2- Exhibit(s) of DDC Facilities: existing and proposed facilities
3- Exhibit(s) of DDC Facilities subject to relocation and/or easements
5- Available Min/Max Pressure table(s) (Residential only)
6- Fire Dept. Requirements
7- Project Conditions Of Approval (Draft or Final)
8- EMWD Fire Flow Test Results
9- Hydraulic Boundary Conditions
10- Accepted Recycled Water Use Exhibit or Plan
11- Reports or special studies
12- CFD Letter, signed by the Owner (Residential tracts only)
13- Plan Check Deposit Schedule
14- Signed "Residential Landscaping Water Budget" (spreadsheet)
15- Manifold detail, for commercial projects
16- DCDA vs RPDA: EMWD Requirements Memo
17- DCDA vs RPDA: Customer memo declaring intent of on-site use (Commercial & industrial use only)
18- Oversizing memo and authorization
19- Prevailing-wage requirements and process description
20- Customer/developer e-mail, waiving oversizing reimbursement from EMWD
21- Signed At-Risk Plan Check Letter request, from Developer
22- Document Required For Plan Check (Form NBD-063)
23- Application For Service Requirements

		Date
Prepared By:	Albert A. Webb Associates	10/16/2018
Reviewed By:	_____	_____
	DSD Engineer & Initials	
Supervisor's Name:	_____	_____
	Senior Engineer & Initials	

Work Order Closure processed ? ☐ Yes ☐ No

EMWD's Disposition:

Initials: **Date:**