

APPENDIX H-2

Utility Capacity Study

Leading Agency
City of Montclair
5111 Benito Street
Montclair, CA 91763



UTILITY CAPACITY STUDY for MONTCLAIR PLACE

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2020-01-22

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1 Introduction

The Montclair Place District Specific Plan is a phased redevelopment over the next 30 years of the existing Montclair Plan Mall and adjacent properties (Montclair Place District Specific Plan Draft November 30, 2018, Section 1.6). This report documents the conceptual study for the capacities and applicability of the existing utilities for each of the phases described in Montclair Place Development Yield Study - 11.21.2019 by Studio 111. New utilities are proposed if the existing facility is insufficient for the proposed development or if the existing facility needs to be relocated due to the layout of the phases.

The Plan area in this report from hereon will refer to the area within The Montclair Place District Specific Plan.

2 Plan Description

2.1 Existing Site

The Plan area is approximately 104 acres and is bounded by Monte Vista Avenue on the west, Central Avenue on the east, Moreno Street on the north and I-10 Freeway on the south, see Location Map below. The existing land use of the Plan area is primarily commercial and retail. Currently on site are department stores, retail stores, fitness center, restaurants and a Unitarian Universalist Congregation Church.

The Montclair Place mall was built in 1968 and has several additions and renovations over the years. The site generally drains from the northeast to southwest at 1% to 5% slope.

2.2 Plan Concept

The Montclair Place Development Yield Study - 11.21.2019 by Studio 111 depicts a redevelopment of the Plan area in 7 phases: Phase A through Phase G. The design will utilize vertical density to maximize the land use. The proposed land use will include residential, general office, medical office, retail area, cinema, hotels and civic office. Parking structures will be constructed to provide parking spaces in addition to the ground level parking. The redevelopment will take place incrementally. In each phase, the area not in the previously developed and current phase will remain the existing condition.

The existing utilities will be maintained and will be utilized to the maximum degree possible in the redevelopment. In each phase, the capacities of the utilities are checked; the facilities with insufficient capacities for the proposed development or in conflict with the proposed layout will be removed or abandoned and new facilities will be constructed.

Table 2-1 lists all the phases and the information for their acreage and land use. Appendix 2-1 shows Montclair Place Development Yield Study - 11.21.2019 by Studio 111.

3 Report Format

The utilities under study in this report include storm drain, sanitary sewer, water and dry utility (electricity, communication, gas, etc.). The analyses of the utility capacities are documented in the following sections.

Location Map



Table 2-1

PHASE INFORMATION

Data Source: CIM MONTCLAIR PLACE DEVELOPMENT YIELD STUDY 11.21.2019

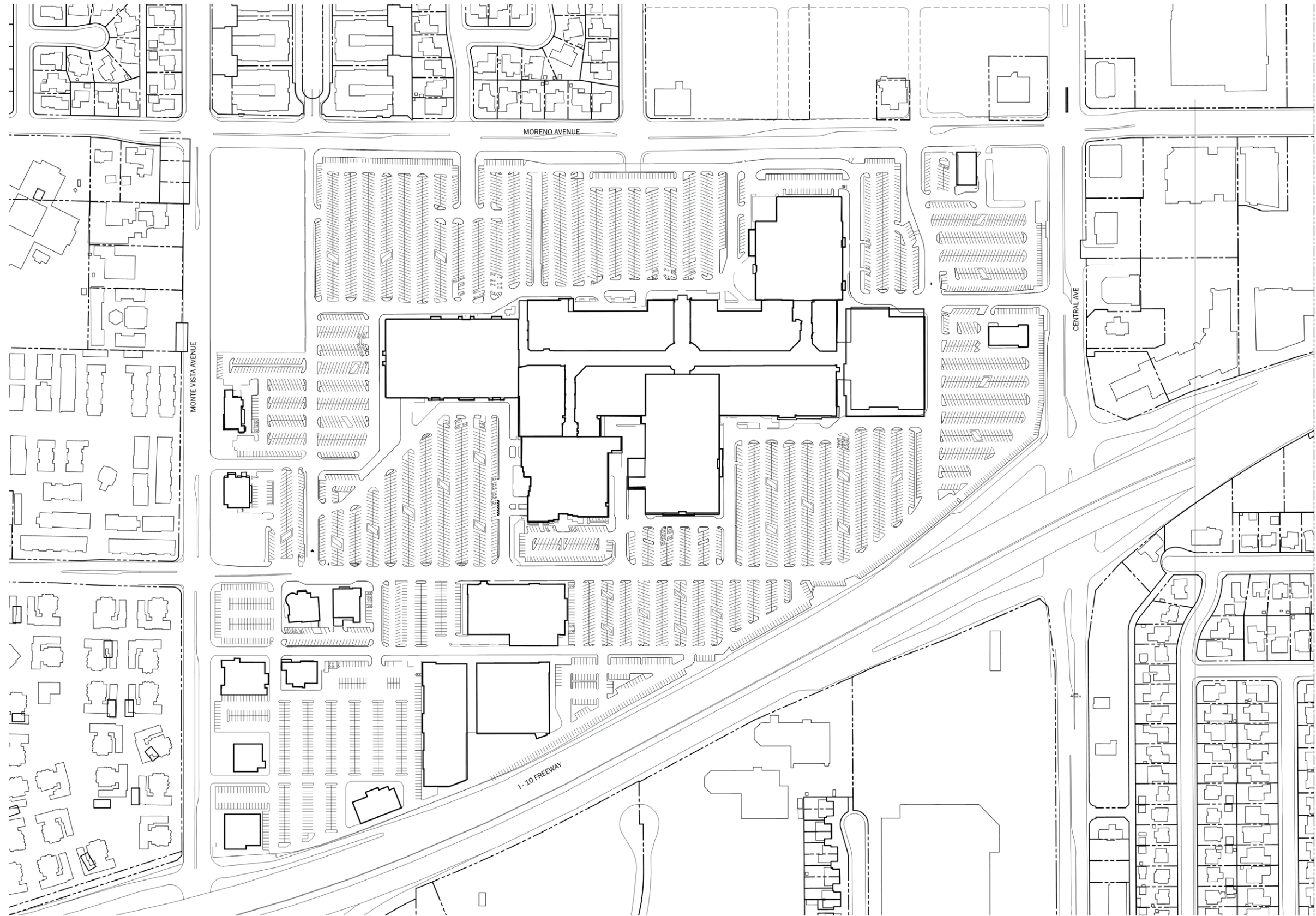
Phase	PARCEL INFORMATION		Residential Density Potential (DU/AC)	Number of units	General Office (SF)	Medical Office (SF)	Retail Area (SF)	Cinema (SF)	Hotel (room)	Civic (SF)
	Parcel Number	Area (Acres)								
A	1	3.27	70	229			10,000			
A	2	6.11	100	611			30,000			
B	6	4.56	100	350			50,000		200	
C	3	1.94	120	233			20,000			
C	4	2.14	120	257			20,000			
C	5	2.38	120	286			25,000			
D	9	2.64			115,000					
D	10	1.14	120	137			20,000			
D	14	1.90	70	133			10,000			
D	15	1.55	70	109			10,000			
D	16	2.02	70	141			10,000			
E	17	2.29	210	481			20,000			
E*	18	2.27	158	477			99,219			
F	7	2.40	120	288			60,000			
F	8	3.41		100			25,000			
F*	18	0.75	52	157			32,781			
F	19	3.77	210	792	60,000		80,000			75,000
F	20	3.64	210	764			160,000			
F	21	3.37	210	708			147,000			
F	22	3.07		65			100,000	60,000		
G	11	2.45				106,000				
G	12	3.56			155,000		10,000			
G	13	2.13				94,800	10,000			

*: Parcel 18 is included in both phase E and phase F. The residential units and retail square footage are divided between phase E and phase F according to the acreage ratio of each phase

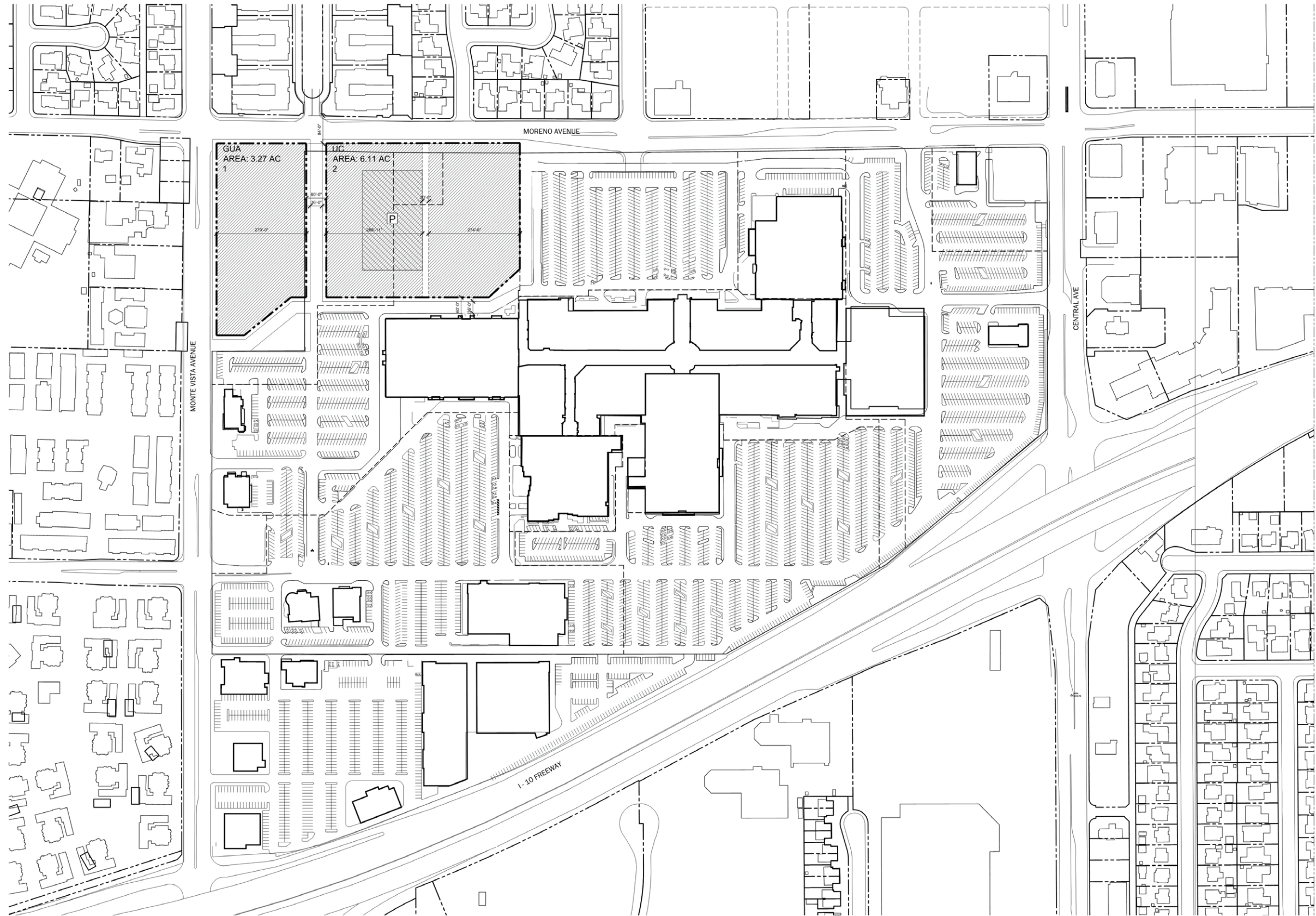
Appendix 2-1

Montclair Place Development Yield Study - 11.21.2019 by Studio 111

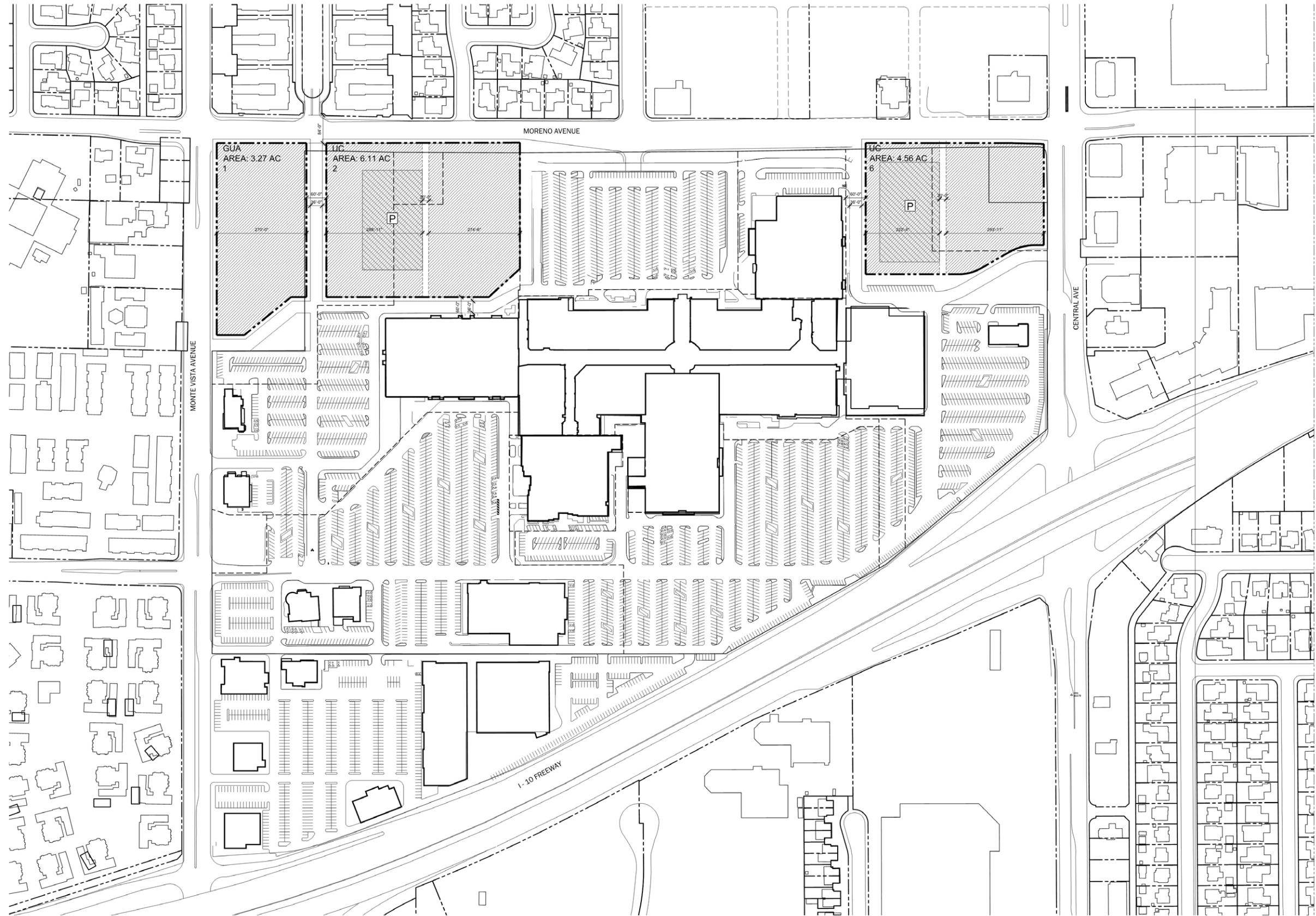
EXISTING CONDITION



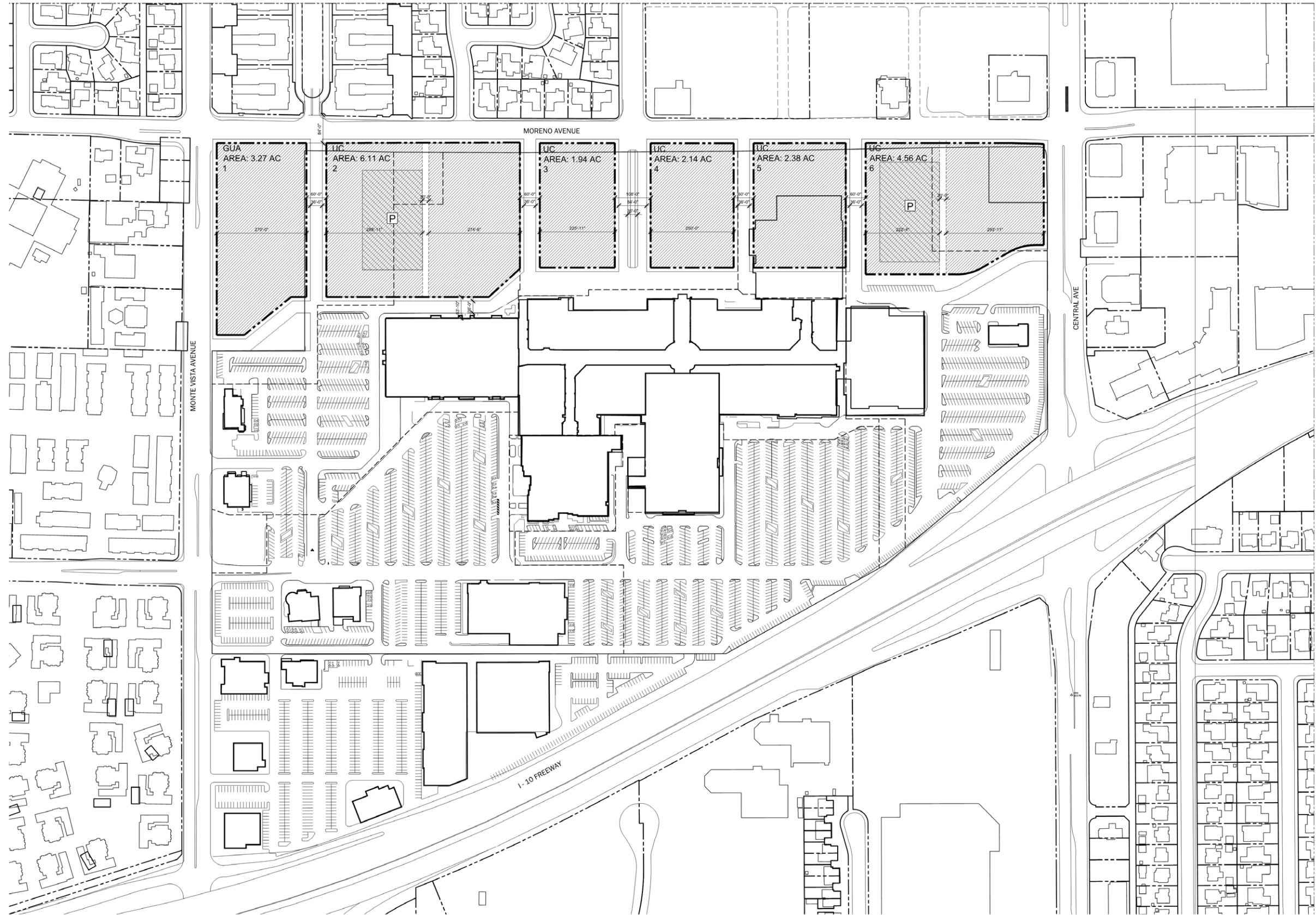
PHASE A



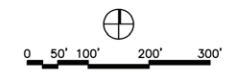
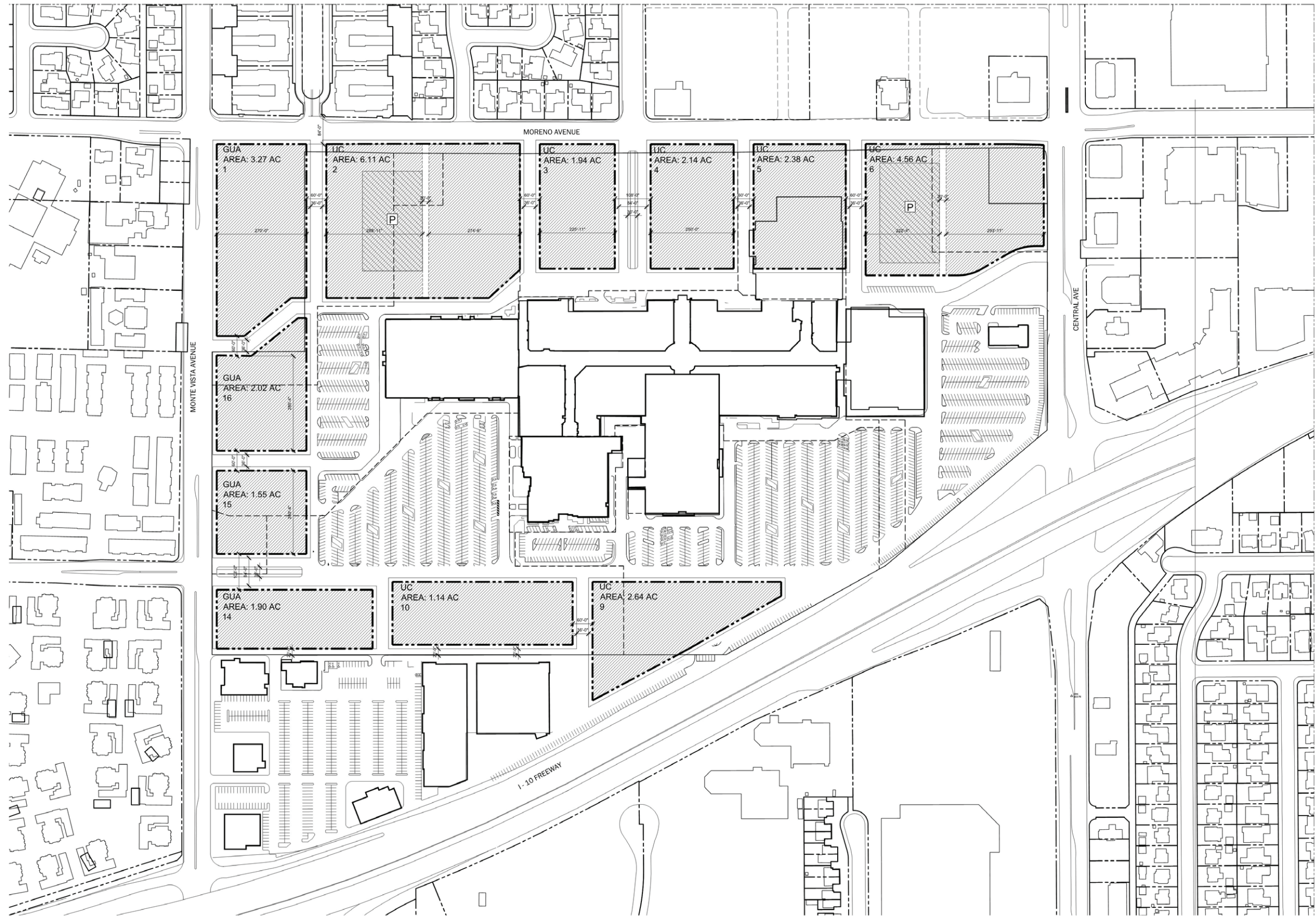
PHASE B



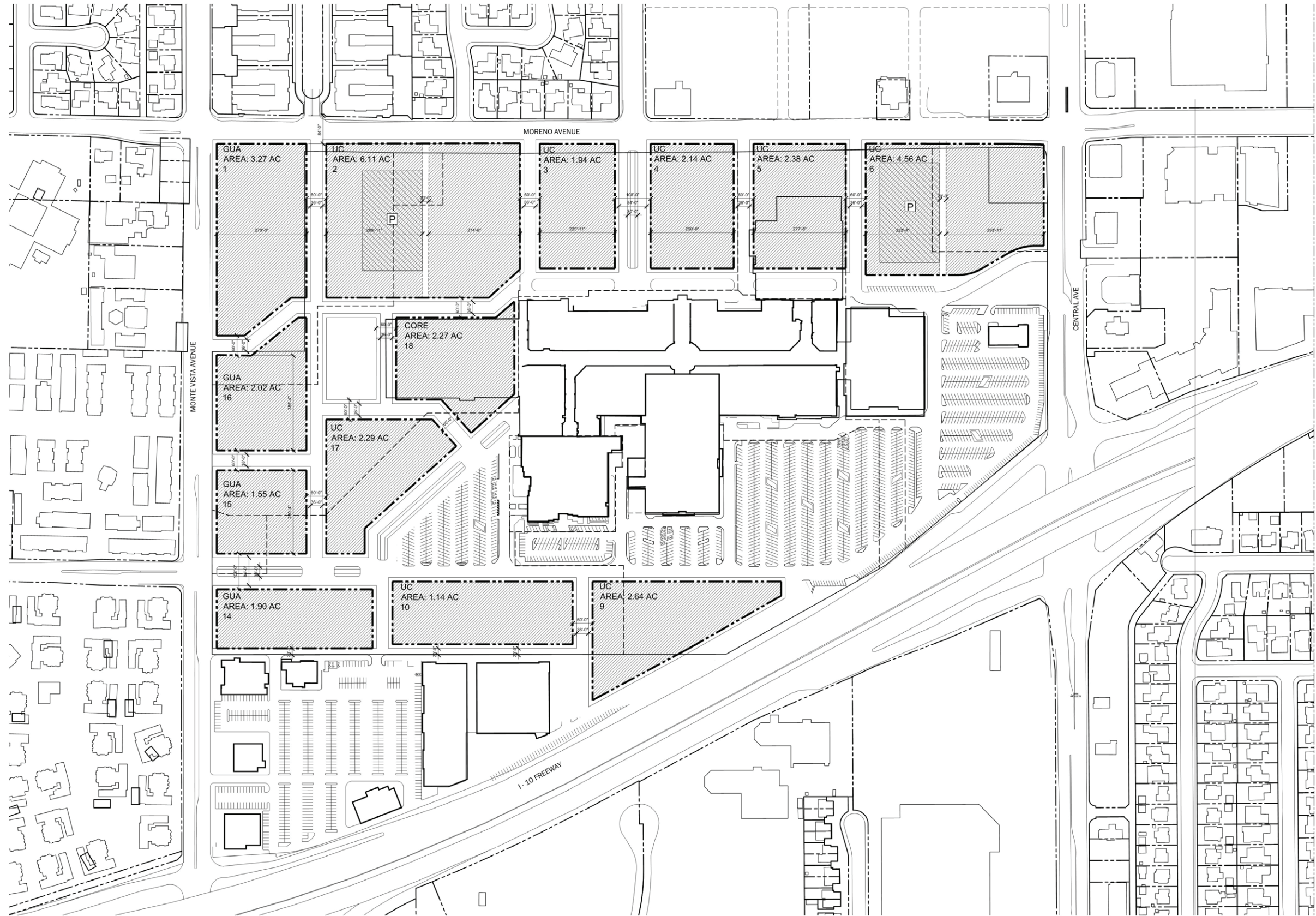
PHASE C



PHASE D



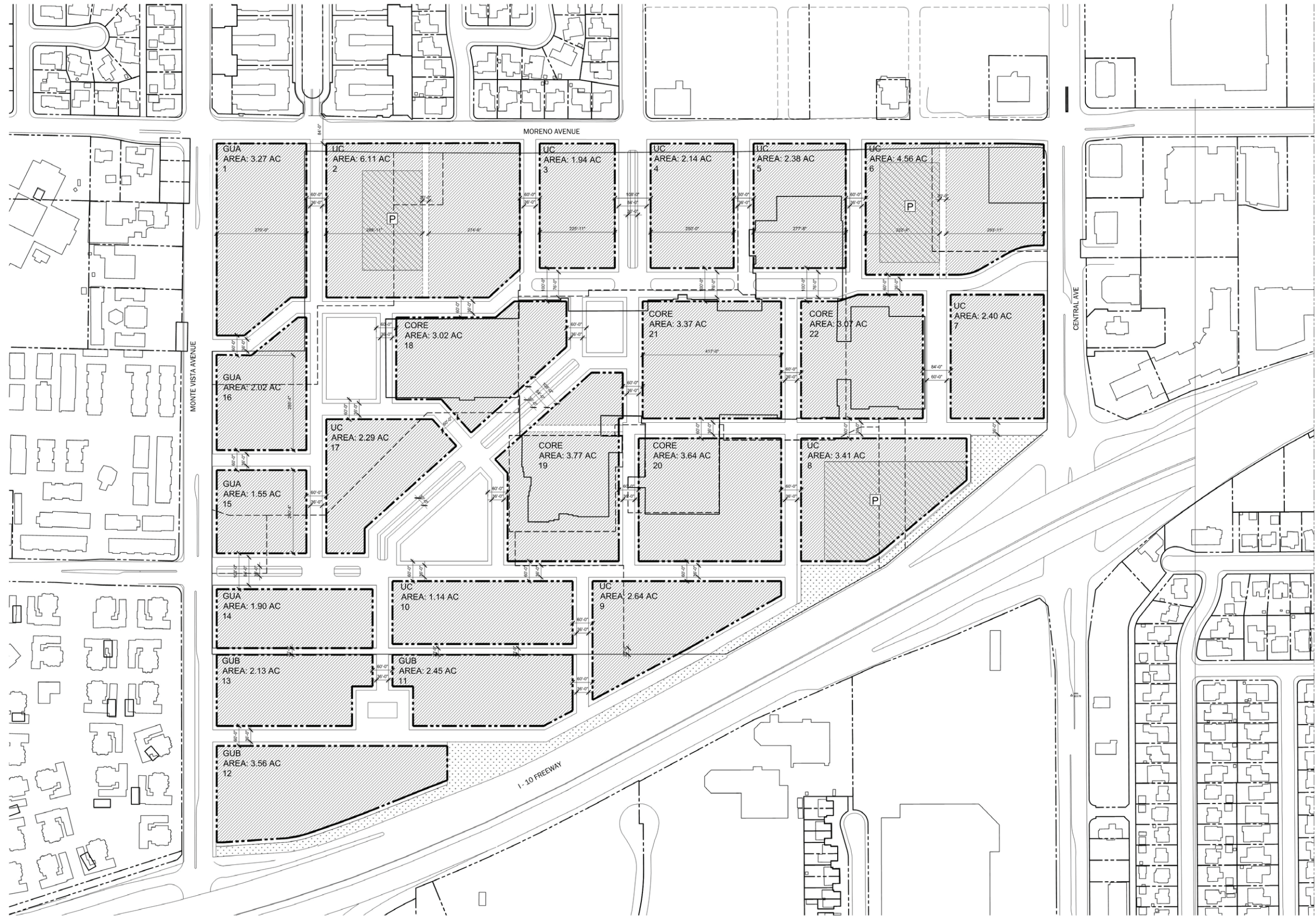
PHASE E



PHASE F



PHASE G



MONTCLAIR PLACE DEVELOPMENT YIELD STUDY - 11.21.2019

PHASE 1

Zone	PARCEL INFORMATION		Residential Density Potential (DU/AC)	Number of units	General Office (SF)	Medical Office (SF)	Retail Area (SF)	Cinema (SF)	Hotel Keys	Civic (SF)		Notes
	Parcel Number	Area (Acres)										
GUA	1	3.27	70	229			10,000		-		-	
UC	2	6.11	100	611			30,000		-		-	
UC	6	4.56	100	350			50,000		200		-	Reduced residential unit count due to hotel and replacement parking components
Total Development Areas				1,190			90,000		200		0	

Latter Phases

Zone	PARCEL INFORMATION		Residential Density Potential (DU/AC)	Number of units	General Office (SF)	Medical Office (SF)	Retail Area (SF)	Cinema (SF)	Hotel Keys	Civic (SF)		Notes
	Parcel Number	Area (Acres)										
UC	3	1.94	120	233			20,000		-		-	
UC	4	2.14	120	257			20,000		-		-	
UC	5	2.38	120	286			25,000		-		-	Sears Property
UC	7	2.40	120	288			60,000		-		-	
UC	8	3.41		100			25,000		-		-	Primarily replacement parking structure, limited residential component
UC	9	2.64			115,000							Primarily office due to freeway proximity
UC	10	1.14	120	137			20,000		-			
GUB	11	2.45				106,000						Primarily office due to freeway proximity
GUB	12	3.56			155,000		10,000					Primarily office due to freeway proximity
GUB	13	2.13				94,800	10,000					Primarily office due to freeway proximity
GUA	14	1.90	70	133			10,000		-		-	
GUA	15	1.55	70	109			10,000		-		-	
GUA	16	2.02	70	141			10,000					
CORE	17	2.29	210	481			20,000					
CORE	18	3.02	210	634			132,000					Retail calculated at 1.0 FAR
CORE	19	3.77	210	792	60,000		80,000			75,000		Less retail due to civic and office uses
CORE	20	3.64	210	764			160,000					Retail calculated at 1.0 FAR
CORE	21	3.37	210	708			147,000					Retail calculated at 1.0 FAR
CORE	22	3.07		65			100,000	60,000	-		-	Cinema block, limited residential
Total Development Areas				5,127	330,000	200,800	859,000	60,000	0	75,000	0	

Final

			Number of units	Medical Office (SF)	Medical Office (SF)	Retail Area (SF)	Cinema (SF)	Hotel Keys	Civic (SF)		Notes
			6,317	330,000	200,800	949,000	60,000	200	75,000		

4 Storm Drain

The existing public storm drain systems around the Plan area include:

- A 72" RCP transitions into an open channel then into an 8'W x4'H RCB along the north side of I-10 Freeway
- A 39" RCP under Central Avenue that drains into the 72" RCP along the north side of I-10 Freeway
- A 48" RCP under Monte Vista Avenue that drains into the 8'W x4'H RCB along the north side of I-10 Freeway
- An 18" RCP transitions into 24" RCP connecting to the 48" RCP under Monte Vista Avenue
- A 42"/45"/48" RCP under Moreno Street

The municipal storm drain is owned by the City of Montclair and discharges to the groundwater recharge basins located approximately ¼ mile west of the Plan area.

Currently the storm water in the Plan area drains to the public system at the following locations:

- A 30" RCP connects to the 72" RCP along the north side of I-10 Freeway
- An 18" RCP connect to the 72" RCP along the north side of I-10 Freeway
- A 24" RCP connect to the 48" RCP under Monte Vista Avenue
- A 42" RCP connect to the 48" RCP under Monte Vista Avenue
- The northwest corner of the Plan area drains to a depression and into the 18" RCP that transitions into 24" RCP connecting to the 48" RCP under Monte Vista Avenue.
- At the time of this report, record drawings had not been obtained for the southwest most portion of the overall retail center. Based on examination of site photos and other methods, there are at least 2 routes for storm water to depart this area. Approximately ¼ of an acre, which is the Black Angus parking lot, appears to discharge from the site via a parkway drain from the west side of the parking lot into Monte Vista Avenue. The majority of the southwest retails center surface flows to curb and gutter running along the southern property boundary. The catch basins along this stretch of curb and gutter are assumed to connect to 8'W x4'H RCB along the north side of I-10 Freeway.

The following parameters were used in the Rational Method to calculate the flow rates to be conveyed in the storm drain systems in each phase:

- Assumed time of concentration is 10 minutes
- Design storm frequency is 25 years
- From NOAA Atlas 14, the 25-year, 10-minute duration precipitation is 0.452 inch; this converts into a rainfall intensity of 2.71 in/hr
- Assumed proposed impervious area ration is 90%; the Rational Method runoff coefficient is 0.7 based on the above parameters

Exhibit 4-1 shows the existing storm drains in and around the Plan area.

Exhibits 4-2A through Exhibit 4-2G show the proposed storm drains where the existing facilities need to be replaced or removed/abandoned. The replacement pipes listed in the tables in the exhibits are the proposed pipes that are in approximate same location as the existing pipe with larger sizes or with new location to avoid future conflict. In the exhibit for each phase, the remaining existing storm drains, the new pipes proposed in the previous phases and the new pipes proposed for the current phase are shown. The pipe quantities for each phase and the accumulated total pipes are listed in the table in each exhibit.

All proposed storm drains use the same slopes as the existing pipes in the vicinity, so that the new pipes can connect to the existing pipes. The except is where there is no existing storm drain at the upstream end of the new pipe to connect to and the existing pipe slope is over 2%: In such case, the new pipe is set at 2% to provide flexibility for future lateral connections.

Tables 4-1A through Table 4-1G list the storm runoff flow rates using Rational Method, the existing pipe flow conditions and the required pipe size if the existing pipe is insufficient. The new pipe sizes are determined by the following factors:

- The minimum size needed to convey the 25-year storm peak discharge, and
- If the upstream pipe has a larger size than the size needed for the current section of storm drain, the larger size from the upstream pipe is used

Table 4-1A

Storm Drain Capacity - Phase A

Assumptions:
 Tc=10 Min.
 Proposed Impervious Ratio = 90%
 25-year Storm Rainfall Intensity = 2.71 in/hr
 Runoff Coefficient C = 0.7

Node	Tributary Area (AC)	Q ₂₅ (cfs)	Total Flow (cfs)	Pipe Ø (in)	Pipe Slope	% full	Required Pipe (in)
C10.22	13.44	26		30	0.5%	69%	
	11.39	22					
P04.21			47	36	0.5%	76%	
	3.24	6					
C04.19			53	(36)	(2.0%)	52%	
	5.64	11					
E04.14			64	(36)	(2.6%)	53%	
	12.44	24					
E03.13			88	(42)	(1.3%)	62%	
E01.17	2.12	4		(18)	(2.1%)	34%	
	2.42	5	9	(18)	(2.1%)	53%	
E00.13			96				

(): Existing pipe size and slope

Table 4-1B**Storm Drain Capacity - Phase B**

Assumptions:

Tc=10 Min.

Proposed Impervious Ratio = 90%

25-year Storm Rainfall Intensity = 2.71 in/hr

Runoff Coefficient C = 0.7

Node	Tributary Area (AC)	Q ₂₅ (cfs)	Total Flow (cfs)	Pipe Ø (in)	Pipe Slope	% full	Required Pipe (in)
C10.22	13.44	26		30	0.5%	69%	
	11.39	22					
P04.21			47	36	0.5%	76%	
	3.24	6					
C04.19			53	(36)	(2.0%)	52%	
	5.64	11					
E04.14			64	(36)	(2.6%)	53%	
	12.44	24					
E03.13			88	(42)	(1.3%)	62%	
E22.21	8.95	17		(30)	(0.7%)	48%	
	2.14	4					
C22.18			21	(30)	(1.0%)	48%	
	2.55	5					
E22.15			26	(30)	(3.5%)	38%	
E01.17	2.12	4		(18)	(2.1%)	34%	
	2.42	5	9	(18)	(2.1%)	53%	
E00.13			96				

(): Existing pipe size and slope

Table 4-1C

Storm Drain Capacity - Phase C

Assumptions:
 Tc=10 Min.
 Proposed Impervious Ratio = 90%
 25-year Storm Rainfall Intensity = 2.71 in/hr
 Runoff Coefficient C = 0.7

Node	Tributary Area (AC)	Q ₂₅ (cfs)	Total Flow (cfs)	Pipe Ø (in)	Pipe Slope	% full	Required Pipe (in)
P16.22	5.62	11		24	0.7%	52%	
	8.03	15					
C10.22			26	30	0.5%	69%	
	11.39	22					
P04.21			47	36	0.5%	76%	
	3.24	6					
C04.19			54	(36)	(2.0%)	52%	
	5.64	11					
E04.14			64	(36)	(2.6%)	53%	
	12.44	24					
E03.13			88	(42)	(1.3%)	62%	
E22.21	8.75	17		(30)	(0.7%)	48%	
	2.14	4					
C22.18			21	(30)	(1.0%)	48%	
	2.55	5					
E22.15			25	(30)	(3.5%)	38%	
E01.17	2.12	4		(18)	(2.1%)	34%	
	2.42	5	9	(18)	(2.1%)	53%	
E00.13			97				

(): Existing pipe size and slope

Table 4-1D

Storm Drain Capacity - Phase D

Assumptions:
 Tc=10 Min.
 Proposed Impervious Ratio = 90%
 25-year Storm Rainfall Intensity = 2.71 in/hr
 Runoff Coefficient C = 0.7

Node	Tributary Area (AC)	Q ₂₅ (cfs)	Total Flow (cfs)	Pipe Ø (in)	Pipe Slope	% full	Required Pipe (in)
P16.22	5.62	11		24	0.7%	52%	
	8.03	15					
C10.22			26	30	0.5%	69%	
	11.39	22					
P04.21			47	36	0.5%	76%	
	4.36	8					
C04.19			56	(36)	(2.0%)	53%	
	7.62	14					
E04.14			70	(36)	(2.6%)	56%	
P13.13	9.15	17		30 ²	0.8%	46%	
	2.32	4	22				
E03.13			92	(42)	(1.3%)	64%	
E22.21	8.75	17		(30)	(0.7%)	48%	
	2.14	4					
C22.18			21	(30)	(1.0%)	48%	
	2.55	5					
E22.15			25	(30)	(3.5%)	38%	
P16.14	10.10	19		24	2.0%	53%	
P18.13			19	24	2.0%	53%	
C16.11			19	24 ¹	(4.6%)	42%	
P11.08	4.59	9		24	0.5%	51%	
E05.11	5.17	10		(24)	(3.8%)	31%	
E01.17	0.90	2		(18)	(2.1%)	24%	
E00.13			94				

(): Existing pipe size and slope

1: Existing 18" pipe at 4.6% is sufficient. The 24" listed here is to match the upstream new pipe size.

2: 24" pipe will be sufficient. However, existing pipe is 27", propose 30" instead of 24".

Table 4-1E

Storm Drain Capacity - Phase E

Assumptions:
 Tc=10 Min.
 Proposed Impervious Ratio = 90%
 25-year Storm Rainfall Intensity = 2.71 in/hr
 Runoff Coefficient C = 0.7

Node	Tributary Area (AC)	Q ₂₅ (cfs)	Total Flow (cfs)	Pipe Ø (in)	Pipe Slope	% full	Required Pipe (in)
P16.22	5.62	11		24	0.7%	52%	
	8.03	15					
C10.22			26	30	0.5%	69%	
	11.39	22					
P04.21			47	36	0.5%	76%	
	3.03	6					
C04.19			53	(36)	(2.0%)	51%	
P13.13	5.81	11		24	0.8%	50%	
P08.17	5.03	10		24	0.5%	55%	
	4.80	9					
C05.13			30	30	0.8%	65%	
	4.78	9					
E03.13			92	(42)	(1.3%)	64%	
E22.21	8.75	17		(30)	(0.7%)	48%	
	2.14	4					
C22.18			21	(30)	(1.0%)	48%	
	2.55	5					
E22.15			25	(30)	(3.5%)	38%	
P16.14	10.10	19		24	2.0%	53%	
P18.13			19	24	2.0%	53%	
C16.11			19	24 ¹	(4.6%)	42%	
P11.08	4.59	9		24	0.5%	51%	
E05.11	5.17	10		(24)	(3.8%)	31%	
E01.17	0.90	2		(18)	(2.1%)	24%	
E00.13			94				

(): Existing pipe size and slope

1: Existing 18" pipe at 4.6% is sufficient. The 24" listed here is to match the upstream new pipe size.

Table 4-1F

Storm Drain Capacity - Phase F

Assumptions:
 Tc=10 Min.
 Proposed Impervious Ratio = 90%
 25-year Storm Rainfall Intensity = 2.71 in/hr
 Runoff Coefficient C = 0.7

Node	Tributary Area (AC)	Q ₂₅ (cfs)	Total Flow (cfs)	Pipe Ø (in)	Pipe Slope	% full	Required Pipe (in)
P16.22	6.66	13		18	0.7%	57%	
	6.61	13					
C10.22			25	30	0.5%	67%	
	11.39	22					
P04.21			47	36	0.5%	76%	
	3.03	6					
C04.19			53	(36)	(2.0%)	51%	
P13.13	4.21	8		18	0.8%	67%	
P08.17	9.12	17		24	0.5%	80%	
	4.61	9					
C05.13			34	(27)	(0.8%)	--	30
E03.13			87	(42)	(1.3%)	62%	
E22.21	7.08	13		(30)	(0.7%)	41%	
P20.18	2.24	4		18	2.0%	34%	
	3.26	6					
C22.18			24	30 ³	1.0%	52%	
	0.76	1					
E22.15			25	(30)	(3.5%)	38%	
P18.18	1.35	3		18	2.0%	29%	
P16.14	6.70	13		24	2.0%	42%	
P18.13			15	24	2.0%	46%	
C16.11			15	24 ¹	(4.6%)	37%	
P11.08	4.78	9		24	0.5%	51%	
E05.11	5.17	10		(24)	(3.8%)	31%	
E01.17	0.90	2		(18)	(2.1%)	24%	
E00.13			2				

(): Existing pipe size and slope

1: Existing 18" pipe at 4.6% is sufficient. The 24" listed here is to match the upstream new pipe size.

3: Required pipe size is 24". Use 30" to match upstream and downstream pipes

Table 4-1G

Storm Drain Capacity - Phase G

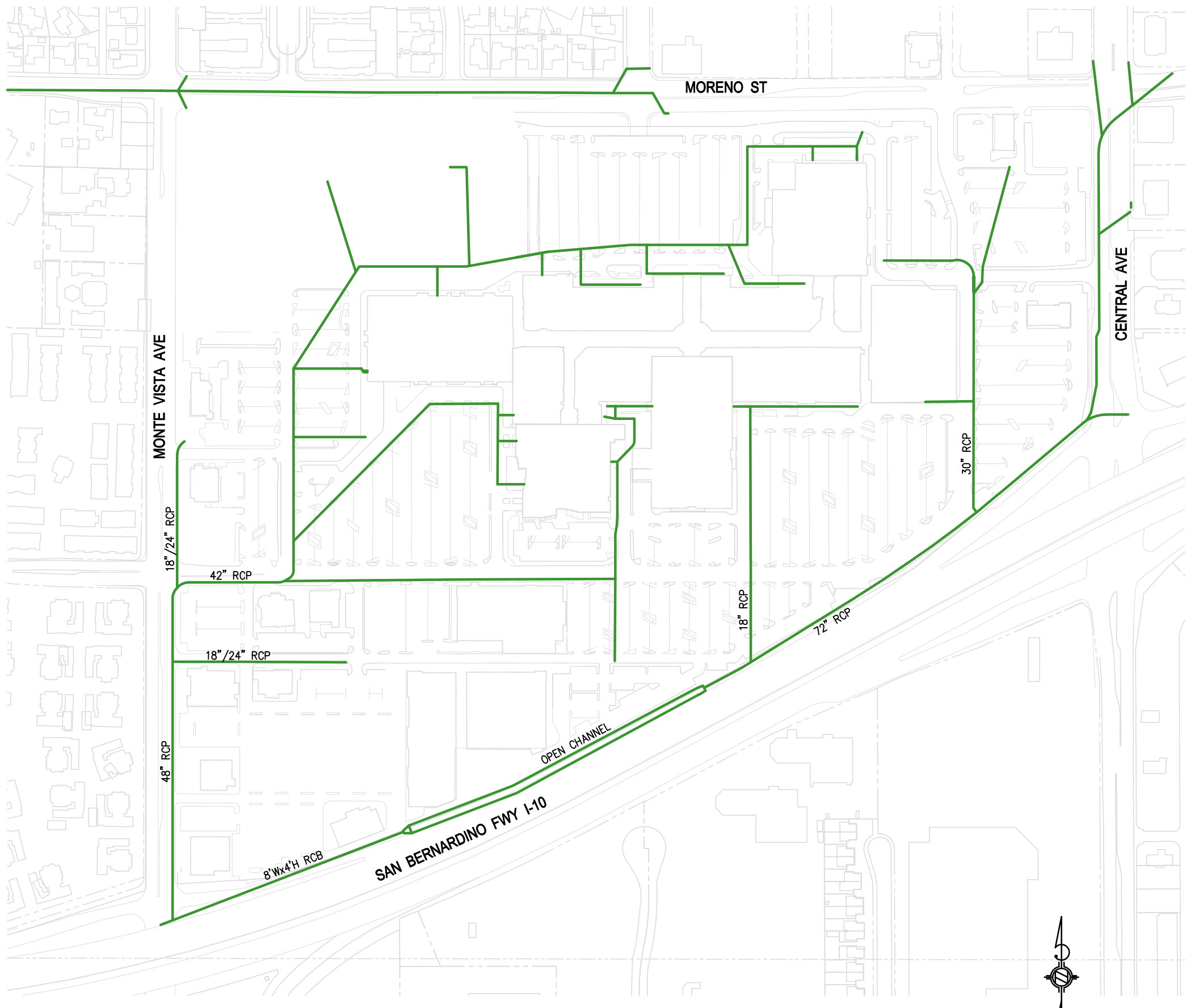
Assumptions:
 Tc=10 Min.
 Proposed Impervious Ratio = 90%
 25-year Storm Rainfall Intensity = 2.71 in/hr
 Runoff Coefficient C = 0.7

Node	Tributary Area (AC)	Q ₂₅ (cfs)	Total Flow (cfs)	Pipe Ø (in)	Pipe Slope	% full	Required Pipe (in)
P16.22	6.66	13		18	0.7%	57%	
	6.61	13					
C10.22			25	30	0.5%	67%	
	11.39	22					
P04.21			47	36	0.5%	76%	
	3.03	6					
C04.19			53	(36)	(2.0%)	51%	
P13.13	4.21	8		18	0.8%	67%	
P08.17	9.12	17		24	0.5%	80%	
	4.61	9					
C05.13			34	(27)	(0.8%)	--	30
E03.13			87	(42)	(1.3%)	62%	
E22.21	7.08	13		(30)	(0.7%)	41%	
P20.18	2.24	4		18	2.0%	34%	
	3.26	6					
C22.18			24	30 ³	1.0%	52%	
	0.76	1					
E22.15			25	(30)	(3.5%)	38%	
P18.18	1.35	3		18	2.0%	29%	
P16.14	6.70	13		24	2.0%	42%	
P18.13			15	24	2.0%	46%	
C16.11			15	24 ¹	(4.6%)	37%	
P11.08	4.78	9		24	0.5%	51%	
E05.11	5.17	10		(24)	(3.8%)	31%	
E01.17	0.90	2		(18)	(2.1%)	24%	
E00.13			2				
P08.09	4.03	8		18	0.5%	82%	
	7.53	14					
P02.09			22	30	0.5%	62%	

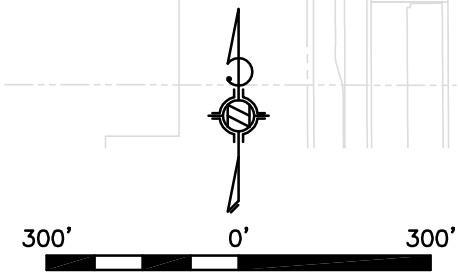
(): Existing pipe size and slope

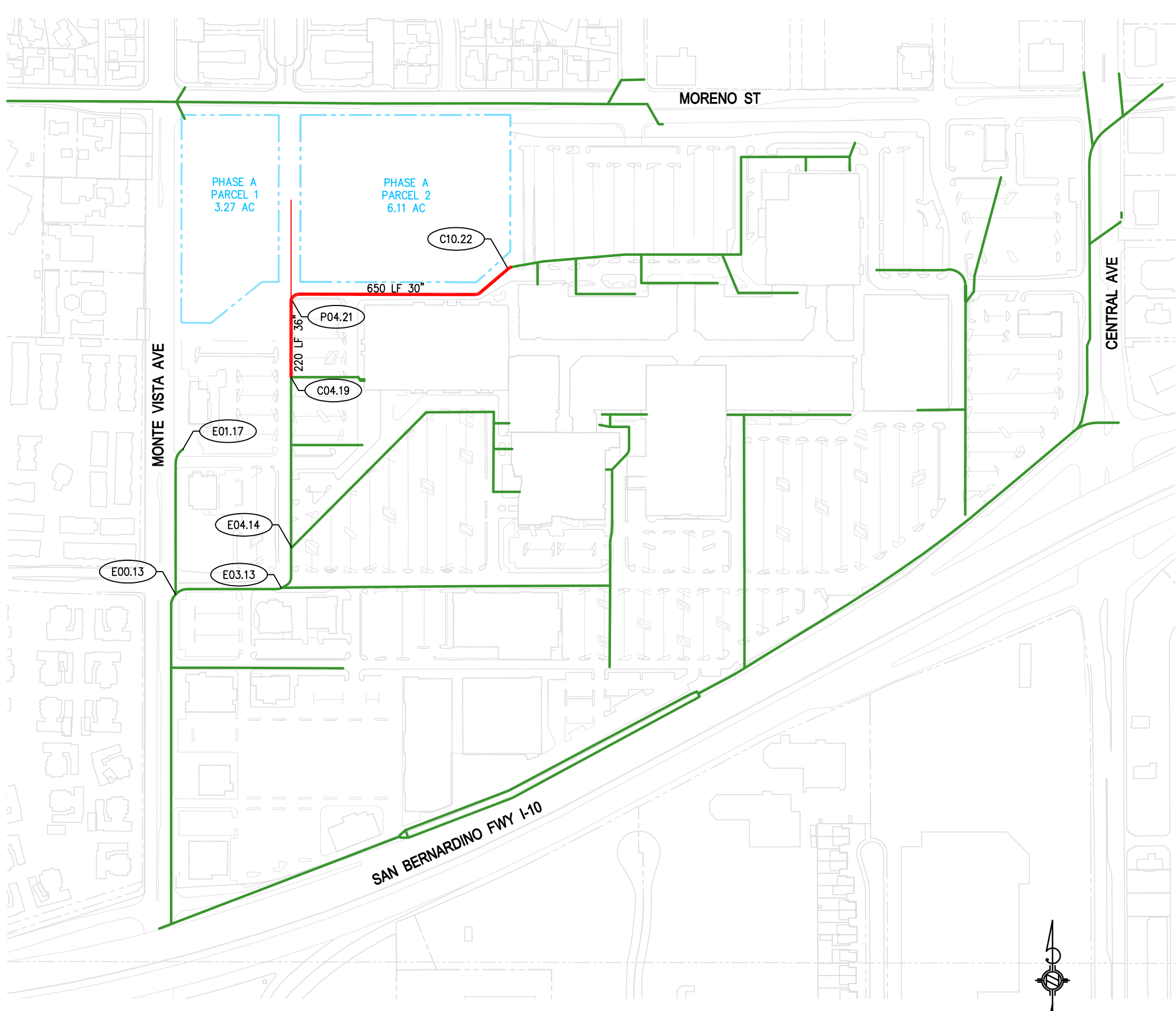
1: Existing 18" pipe at 4.6% is sufficient. The 24" listed here is to match the upstream new pipe size.

3: Required pipe size is 24". Use 30" to match upstream and downstream pipes



LEGEND
 — EXISTING STORM DRAIN

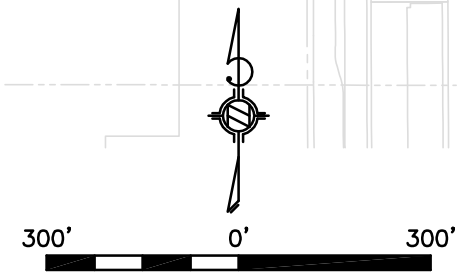


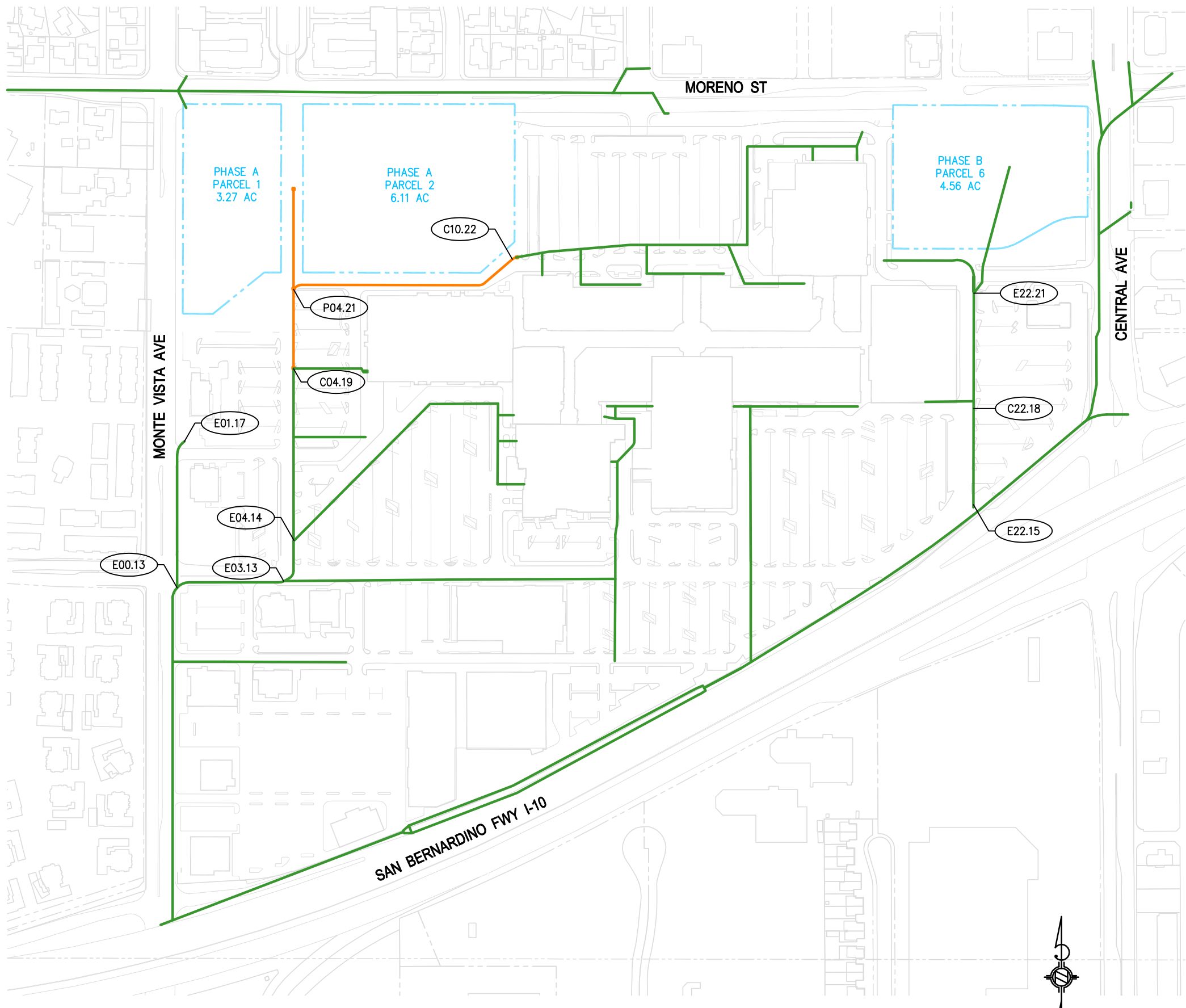


LEGEND

- EXISTING STORM DRAIN
- PHASE A NEW STORM DRAIN
- - - PHASE BOUNDARY
- (XXX.XX) NODE ID

Pipe Ø (in)	Phase A			
	18	24	30	36
Phase A New Pipe (ft)			650	220
Phase A Replacement Pipe (ft)				
Total Pipe Phase A (ft)			650	220

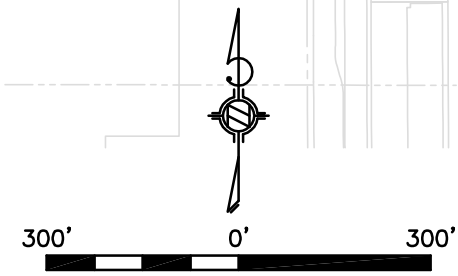


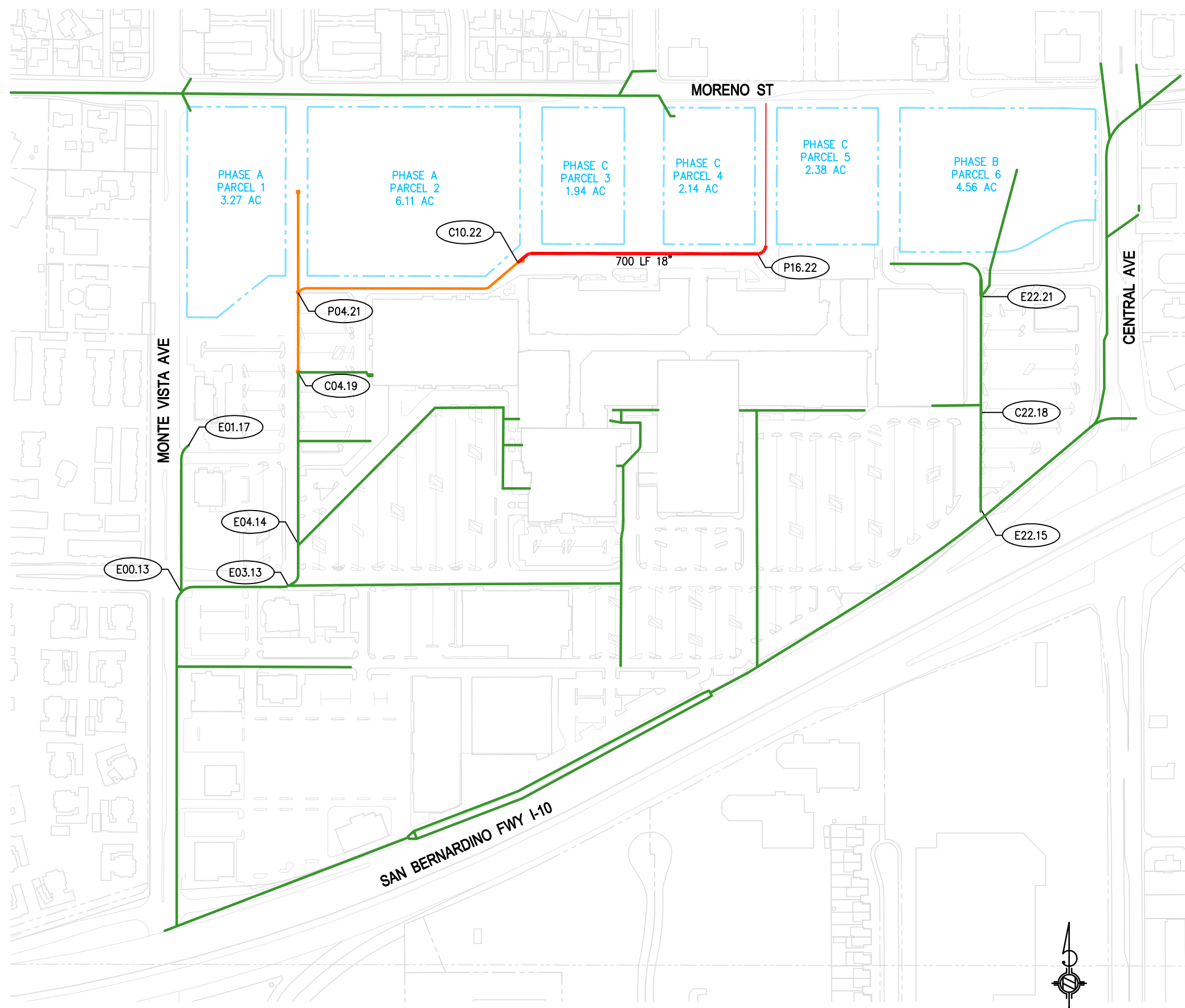


LEGEND

- EXISTING STORM DRAIN
- PREVIOUS PHASE STORM DRAIN
- - - PHASE BOUNDARY
- (XXX.XX) NODE ID

Pipe Ø (in)	Phase B		
	18	24	36
Phase B New Pipe (ft)			
Phase B Replacement Pipe (ft)			
Total Pipe Phases A-B (ft)			650
			220

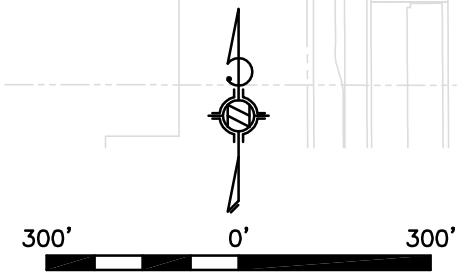


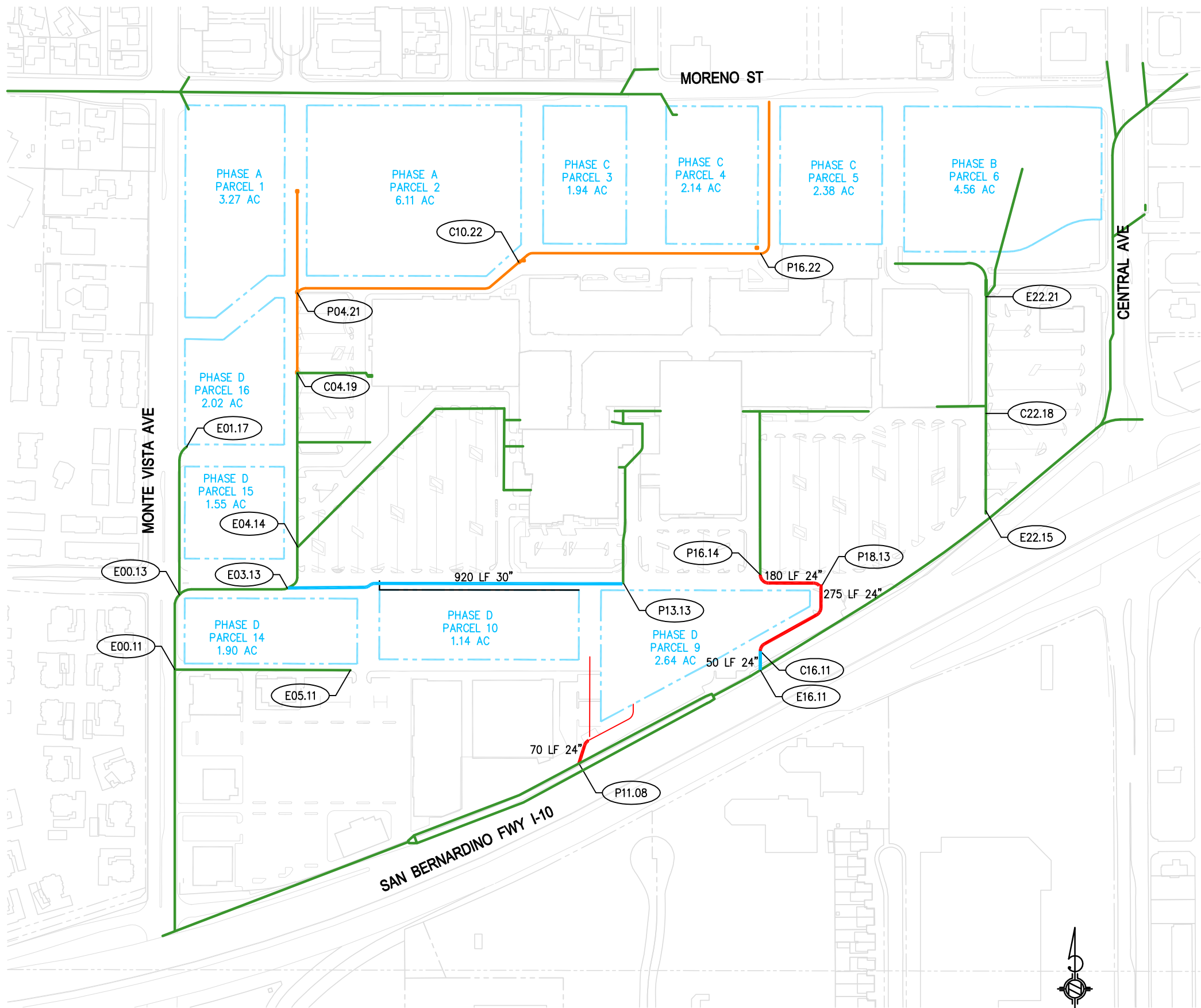


LEGEND

- EXISTING STORM DRAIN
- PHASE C NEW STORM DRAIN
- PREVIOUS PHASES STORM DRAIN
- - - PHASE BOUNDARY
- (XXX.XX) NODE ID

Pipe Ø (in)	Phase C			
	18	24	30	36
Phase C New Pipe (ft)	700			
Phase C Replacement Pipe (ft)				
Total Pipe Phases A-C (ft)	700	0	650	220

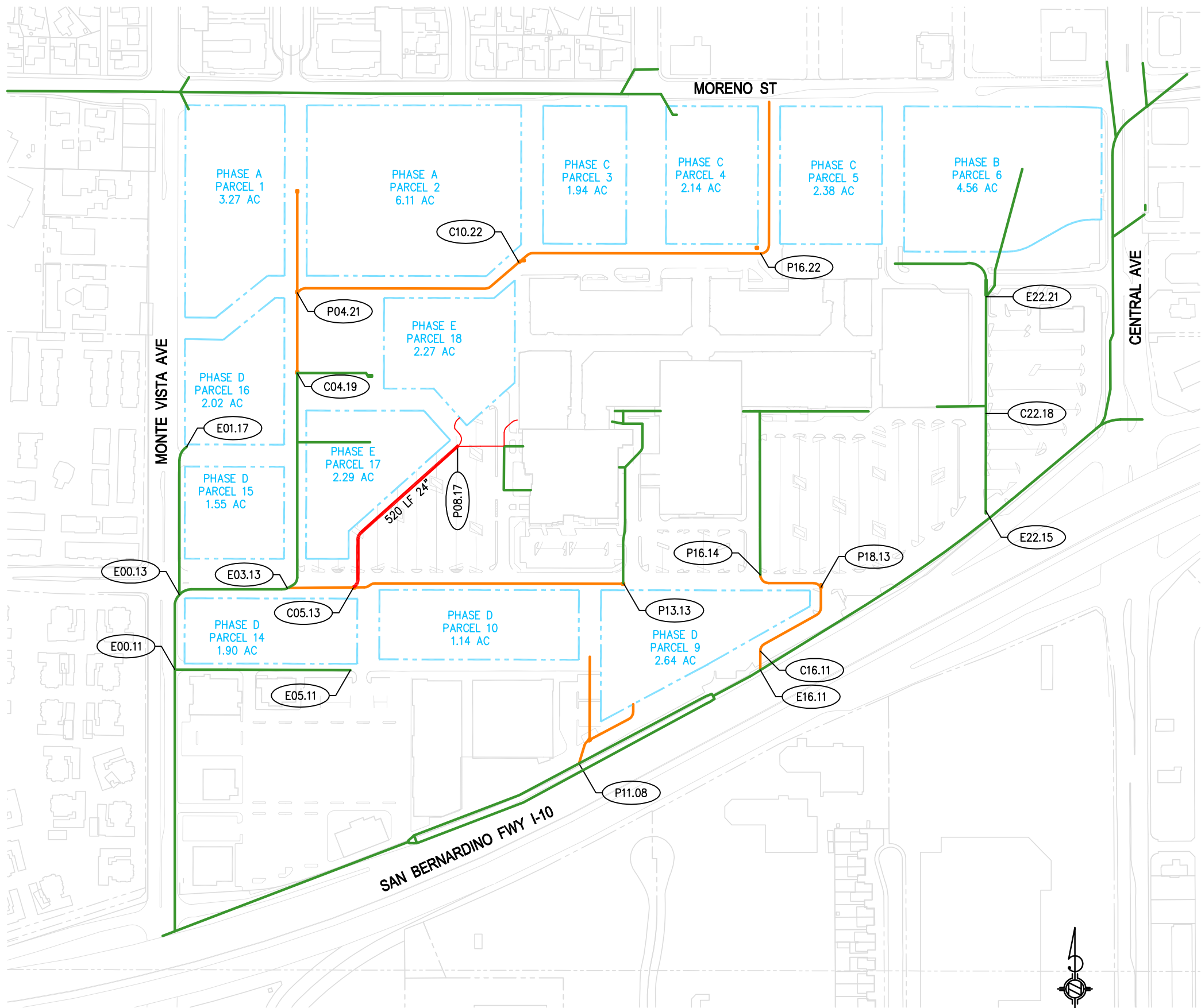




LEGEND

- EXISTING STORM DRAIN
- PHASE D NEW STORM DRAIN
- PHASE D REPLACEMENT STORM DRAIN
- PREVIOUS PHASES STORM DRAIN
- - - PHASE BOUNDARY
- (XXX.XX) NODE ID

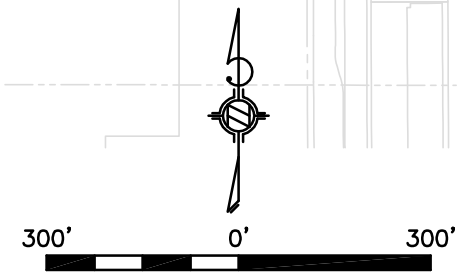
Pipe Ø (in)	Phase D			
	18	24	30	36
Phase D New Pipe (ft)		525		
Phase D Replacement Pipe (ft)		50	920	
Total Pipe Phases A-D (ft)	700	575	1,570	220



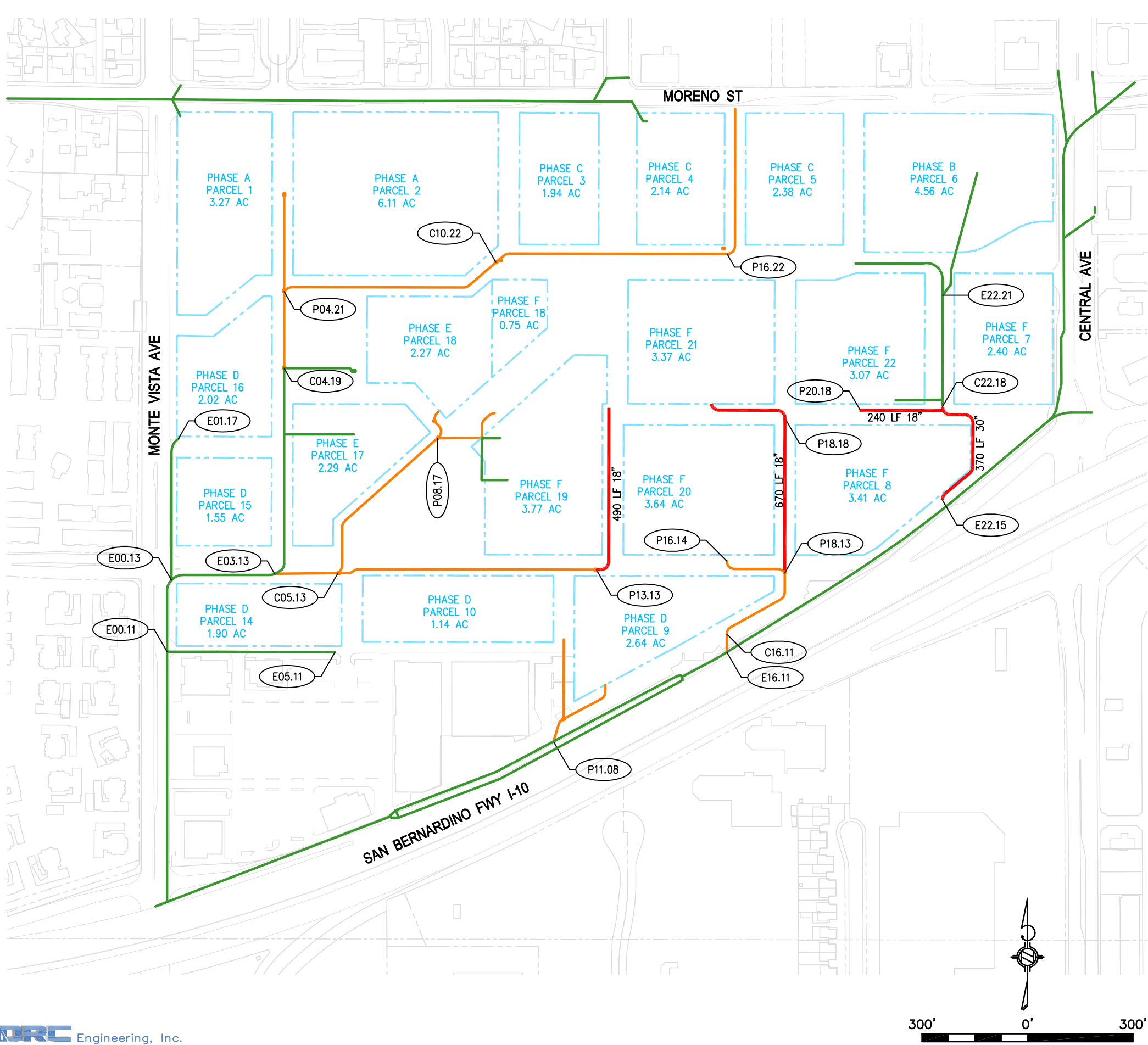
LEGEND

- EXISTING STORM DRAIN
- PHASE E NEW STORM DRAIN
- PREVIOUS PHASES STORM DRAIN
- - - PHASE BOUNDARY
- XXX.XX NODE ID

Pipe Ø (in)	Phase E			
	18	24	30	36
Phase E New Pipe (ft)		520		
Phase E Replacement Pipe (ft)				
Total Pipe Phases A-E (ft)	700	1,095	1,570	220



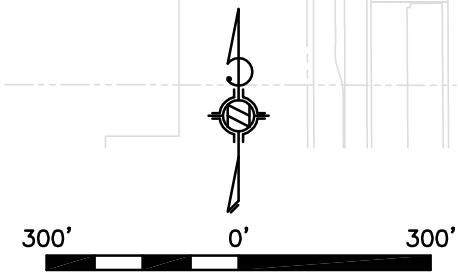
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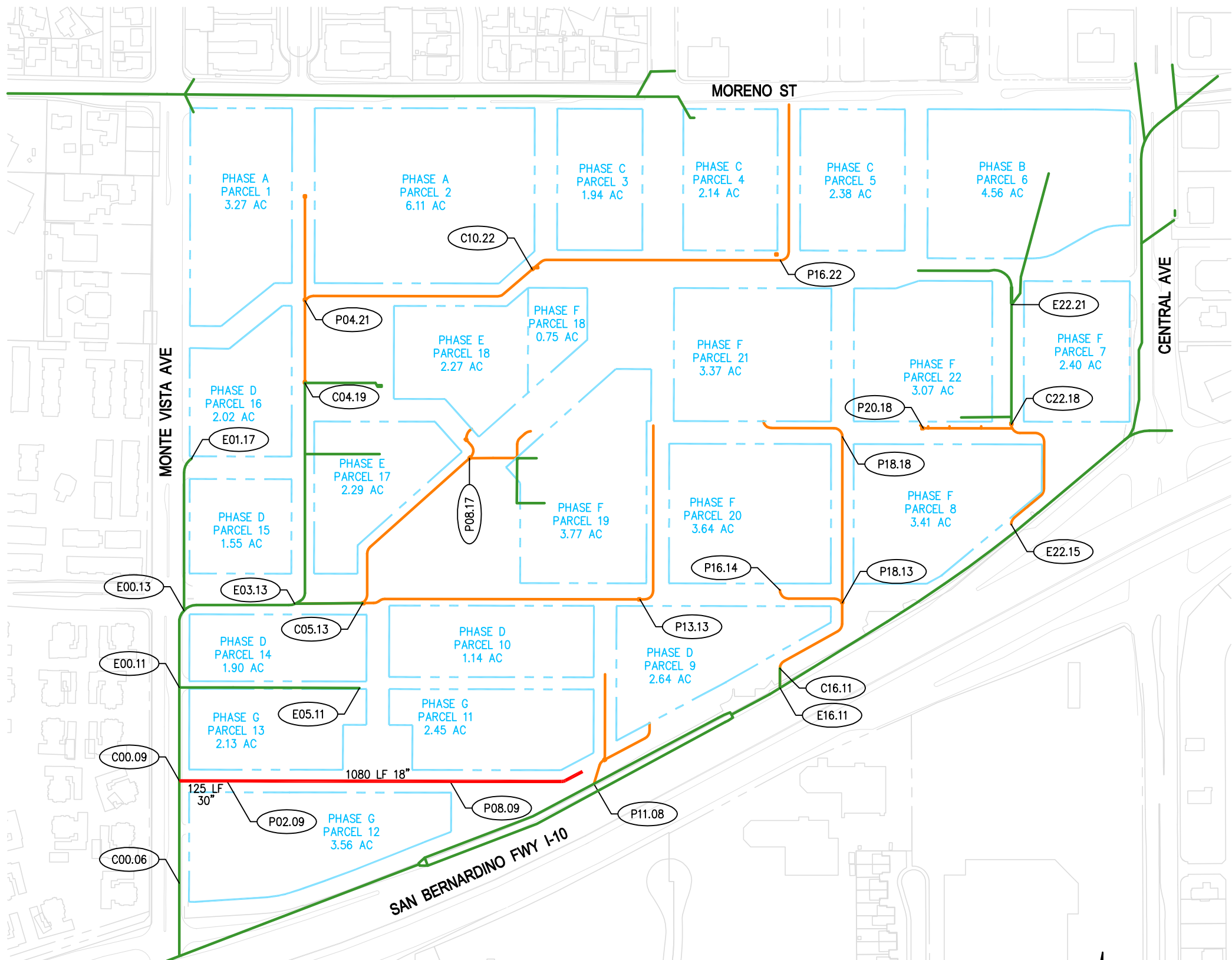
LEGEND

- EXISTING STORM DRAIN
- PHASE F NEW STORM DRAIN
- PREVIOUS PHASES STORM DRAIN
- - - PHASE BOUNDARY
- XXX.XX NODE ID

Pipe Ø (in)	Phase F			
	18	24	30	36
Phase F New Pipe (ft)	1,400		370	
Phase F Replacement Pipe (ft)				
Total Pipe Phases A-F (ft)	2,100	1,095	1,940	220



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LEGEND

- EXISTING STORM DRAIN
- PHASE G NEW STORM DRAIN
- PREVIOUS PHASES STORM DRAIN
- PHASE BOUNDARY
- XXX.XX NODE ID

Pipe Ø (in)	Phase G			
	18	24	30	36
Phase G New Pipe (ft)	1,080		125	
Phase G Replacement Pipe (ft)				
Total Pipe Phases A-G (ft)	3,180	1,095	2,065	220

5 Sanitary Sewer

The City of Montclair has recently received a draft Sewer Master Plan prepared by David Evans and Associates for planning purposes. This study currently does not account for the redevelopment of the Montclair Place District Specific Plan area.

The municipal sewer flows south and west across the City to an IEUA (Inland Empire Utility Authority) trunk line to a regional treatment plant (David Evans & Associates; Page 1-1). The site is located at the northern edge of Basin ID 5, as identified in Figure 3-1 of David Evans & Associates (see below). The project discharges sewer flows from the site into an existing 10-inch VCP public sanitary sewer system located in Monte Vista Avenue at the intersection of San Jose Street. This existing 10-inch public system has been identified within the Sewer Master Plan as sufficient in the current condition (Figure 5-1 Deficient Line Segments, David Evans & Associates; Page 5-2). However due to the age of the line, the primary point of connection for the site at the intersection of Monte Vista Avenue and San Jose Street has been recommended in the Master Plan to be relined (Figure 7-1 Recommended Sewer Rehabilitation for Structural Defects, David Evans & Associates; Page 7-4).

Also, the analysis in this report indicates the sewer flow will increase significantly after the redevelopment of the Plan area. The sewer line connecting to the existing 10" VCP at the intersection of Monte Vista Avenue and San Jose Street will need to upsize from the existing 8" to 18". Also, there will be a new 8" sewer line proposed for Phase G, south of the existing 8" VCP. The increase of sewer flow will most likely require the existing 10" VCP under Monte Vista Avenue south of San Jose Street to be upsized.

Exhibit 5A through Exhibit 5G show the proposed sewer lines where the existing facilities need to be replaced or removed/abandoned. In the exhibit for each phase, the remaining existing sewer lines, the new pipes proposed in the previous phases and the new pipes proposed for the current phase are shown. The pipe quantities for each phase and the accumulated total pipes are listed in the table in each exhibit.

All proposed sewer lines use the same slopes as the existing pipes in the vicinity, so that the new pipes can connect to the existing pipes.

Tables 5-1A through Table 5-1G list the estimated sewer flow rates, the existing pipe flow conditions and the required pipe size if the existing pipe is insufficient. The following are the information used in the sewer flow estimate:

- The unit flow rates for each land use are from the Sewer Master Plan, Final Draft June 2017, Table 3-4 Calibrated Unit Flow Factors, by David Evans & Associates, as shown below.
- Peaking factor is 2 per Sewer Master Plan, Final Draft p. 4-5
- Maximum pipe percentage full (d/D) allowed is 50% per City's Specifications & Special Provisions for Design and Construction, sec. 6-05
- The residential densities listed in Montclair Place Development Yield Study - 11.21.2019 by Studio 111 range from 70 to 210 DU/AC. The highest density listed in the Sewer Master Plan, Final Draft is 22 DU/AC with a unit flow factor of 191 gpd/DU. The unit sewer flow used for the residential land use in this report uses 191 gpd/DU.
- Civic land use uses the same unit flow factor as Office in the Sewer Master Plan, Final Draft

- Medical Office land use uses same unit flow factor as Hospital in the Sewer Master Plan, Final Draft
- Hotel uses the same unit flow factor as High Density Residential in the Sewer Master Plan, Final Draft
- There are 2 existing open space areas in the Plan area, one on the northeast corner and one next to the intersection of Monte Vista Avenue and San Jose Street. These 2 open space areas are excluded in the sewer flow count
- Parcel 18 is included in both phase E and phase F. The residential units and retail land use square footage are divided between phase E and phase F according the acreage ratio of each phase
- The sewer flow for retail land use is calculated using building footprint area for the proposed phases and using land acreage for the existing retails because the buildings in the proposed phases will be multiple stories.

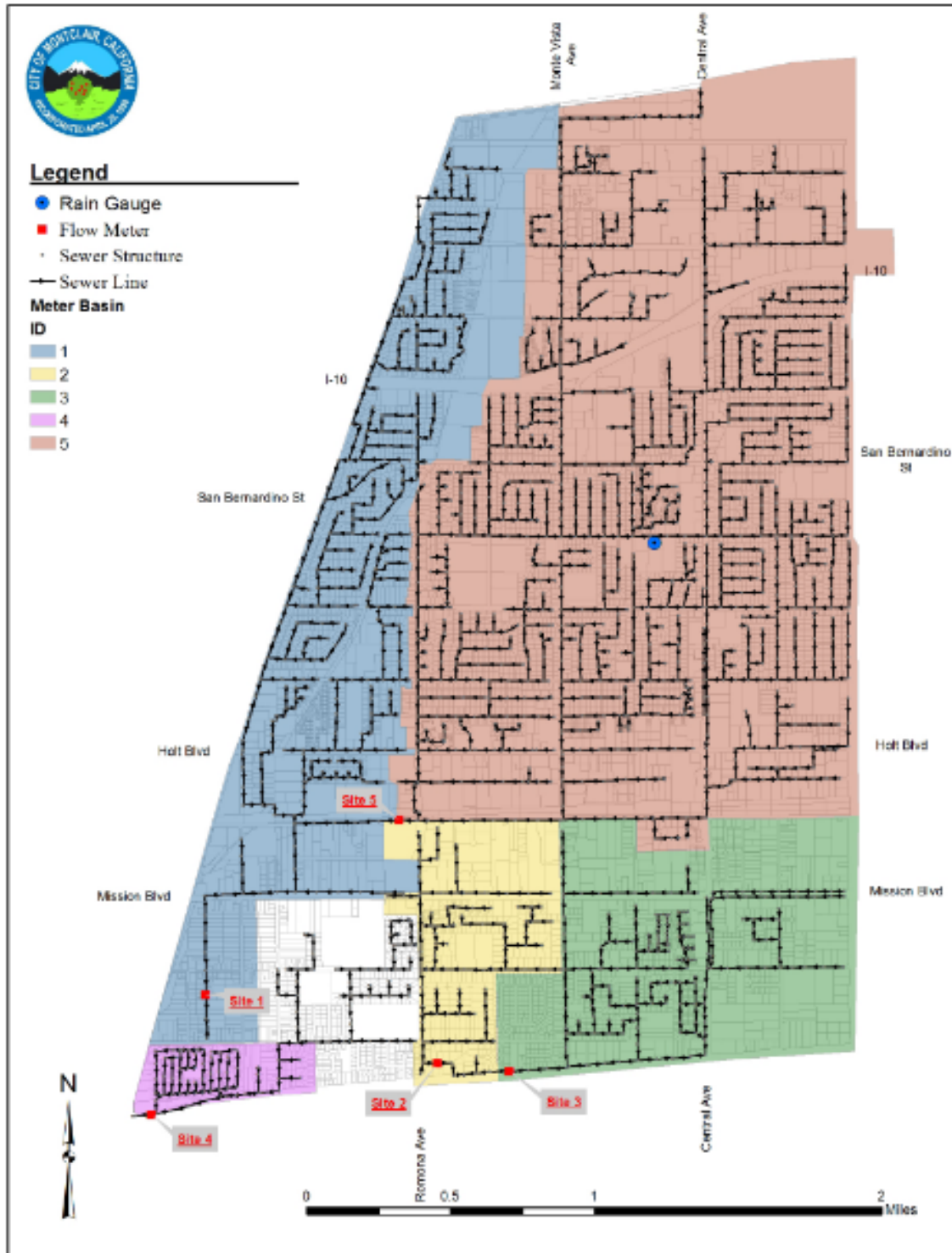
Sewer Master Plan, Final Draft June 2017, by David Evans & Associates

Table 3-4 Calibrated Unit Flow Factors

Land Use Category	Descriptions	gpd/ac	Average FAR per GIS	gpd/tsf	Median Housing Density per GP (DU/ac)	gpd/DU
Very Low Density Residential	Semi-rural environment with minimum 0.5 acre of lot size for keeping large animals	200	n/a	n/a	1	200
Low Density Residential	Detached single-family houses	1,200	n/a	n/a	5	240 ¹
Medium Density Residential	Duplex, townhomes, and apartments	2,400	n/a	n/a	11	218
High Density Residential	Senior housing, townhomes, apartments	4,200	n/a	n/a	22	191
Commercial	grocery stores, restaurants, service providers, automobile sales, etc.	2,800	0.40	161	n/a	n/a
Office	professional and administrative offices	800	0.40	46	n/a	n/a
Light Industrial	warehouses and wholesale activities	400	0.40	23	n/a	n/a
Heavy Industrial	manufacturing activities	1,200	0.40	69	n/a	n/a
Hospital	medical and dental offices	3,000	0.40	172	n/a	n/a
School	public and private schools	600	n/a	n/a	n/a	n/a
Park	public parks	100	n/a	n/a	n/a	n/a

(From Sewer Master Plan, Final Draft June 2017, by David Evans and Associates, Inc.)

Figure 3-1 Flow Meter and Rain Gauge Locations



The pipe sizes shown on Exhibits 5A through 5G are the ultimate pipe sizes. For example, if a pipe needs to be 10" in Phase A but needs to be 15" for the flow after the development of Phase F, the pipe is listed as 15" in Exhibit 5A.

For Phase A: A temporary connection from Phase A area to the sewer line under Monte Vista Avenue is proposed so that the existing sewer doesn't need to be disturbed till later phases. Once the new sewer main is constructed in Phase C, the section of temporary pipes will be removed or abandoned and the sewer main from Phase A will be connected to the new line.

For Phase B: New sewer main is proposed to connect to the existing sewer line east of the existing Sears building. The existing sewer goes under Sears building. To convey the sewer flow after the development of Phase B will require upsizing the downstream sewer lines. Since Sears building is in Phase C, to replace the sewer pipes under the Sears building will be infeasible. Without replacing the downstream pipes for Phase B development, the peak flow in the sewer pipes can reach 65% full, which is over the 50% maximum listed in the City's Specifications & Special Provisions for Design and Construction. However, this is a temporary condition; once the proposed sewer mains in Phase C are constructed, the flow condition will be improved and meet the City's requirement.

Table 5-1A

Sewer Capacity - Phase A

unit		gpd/DU	gpd/1,000 sf	gpd/1,000 sf	gpd/ac	gpd/1,000 sf	gpd/room	gpd/1,000 sf			Peaking Factor		If existing pipe is insufficient
unit flow		191	46	172	2800	161	191	46			2		

Node	Tributary Area	Number of units	General Office (sf)	Medical Office (sf)	Existing Retail Area (ac)	Future Retail Area Cinema (sf)	Hotel (room)	Civic (sf)	Total Flow Rate (x 1000 gpd)	Total Flow Rate (cfs)	Peak Flow Rate (cfs)	Pipe Ø (in)	Pipe Slope	% Full	Required Pipe (in)
	Phase A Parcel 1	229				10,000									
	Phase A Parcel 2	611				30,000									
	Total	840				40,000									
P03.22	Flow Rate (x 1000 gpd)	160				6			167	0.26	0.52	10 ¹	0.6%	38.2	

1: During Phase A and Phase B, the sewer from Phase A areas will discharge to the existing 10" VCP under Monte Vista Avenue through a temporary 10" pipe on the south side of Parcel 1. The new temporary 10" pipe will connect to an existing stub approximately 680' north of San Jose Street. The size and slope of this existing stub pipe is unknown at the time of this report. If this stub is found insufficient for the proposed sewer flow from Phase A areas, the stub will need to be replaced. Also, a section of the new pipes will be 15", the ultimate size for the pipe after all phases are developed.

Table 5-1B

Sewer Capacity - Phase B

unit		gpd/DU	gpd/1,000 sf	gpd/1,000 sf	gpd/ac	gpd/1,000 sf	gpd/room	gpd/1,000 sf			Peaking Factor				If existing pipe is insufficient
unit flow		191	46	172	2800	161	191	46			2				
Node	Tributary Area	Number of units	General Office (sf)	Medical Office (sf)	Existing Retail Area (ac)	Future Retail Area Cinema (sf)	Hotel (room)	Civic (sf)	Total Flow Rate (x 1000 gpd)	Total Flow Rate (cfs)	Peak Flow Rate (cfs)	Pipe Ø (in)	Pipe Slope	% Full	Required Pipe (in)
	EX-5				3.28										
E23.20	Flow Rate (x 1000 gpd)				9				9	0.01	0.03				
	Phase B Parcel 6	350				50,000	200								
P22.22	Flow Rate (x 1000 gpd)	67				8	38		113	0.18	0.35	8	0.6%	42.0	
	1/2 of Remaining EX-3				22.63										
	Flow Rate (x 1000 gpd)				63				63	0.10	0.20				
C19.21									186	0.29	0.57	(8)	(0.6%)	55.9 ¹	10
	EX-2 Effective area				3.51										
	Flow Rate (x 1000 gpd)				10				10						
C03.20									195	0.30	0.60	(8)	(0.6%)	57.7	10
	1/2 of Remaining EX-3				22.63										
E12.13	Flow Rate (x 1000 gpd)				63				63	0.10	0.20	(8)	(0.6%)	31.2	
	EX-6				7.47										
	EX-7				12.09										
	Total				19.55										
	Flow Rate (x 1000 gpd)				55				55						
E03.13									314	0.49	0.97	(8)	(1.1%)	65.1 ²	10

(): Existing pipe size and slope

1: Existing 8" pipe runs under the existing Sear building. Without replacement, the pipe will be 56% full under peak flow condition

2: Existing pipe is 8". Without replacement, the pipe will be 65% full under peak flow condition

Table 5-1C

Sewer Capacity - Phase C

unit		gpd/DU	gpd/1,000 sf	gpd/1,000 sf	gpd/ac	gpd/1,000 sf	gpd/room	gpd/1,000 sf			Peaking Factor				If existing pipe is insufficient
unit flow		191	46	172	2800	161	191	46			2				
Node	Tributary Area	Number of units	General Office (sf)	Medical Office (sf)	Existing Retail Area (ac)	Future Retail Area Cinema (sf)	Hotel (room)	Civic (sf)	Total Flow Rate (x 1000 gpd)	Total Flow Rate (cfs)	Peak Flow Rate (cfs)	Pipe Ø (in)	Pipe Slope	% Full	Required Pipe (in)
	EX-5				3.28										
E23.20	Flow Rate (x 1000 gpd)				9				9	0.01	0.03				
	Phase B Parcel 6	350				50,000	200								
P22.22	Flow Rate (x 1000 gpd)	67				8	38		113	0.18	0.35	8	0.6%	42.0	
	Phase C Parcel 3	233				20,000									
	Phase C Parcel 4	257				20,000									
	Phase C Parcel 5	286				25,000									
	1/2 of Remaining EX-3				18.15										
	Total	776			18.15	65,000									
	Flow Rate (x 1000 gpd)	148			51	10			210	0.32	0.65				
C19.21									332	0.51	1.03	(8)	(0.6%)	--	12
	Phase A Parcel 1	229				10,000									
	Phase A Parcel 2	611				30,000									
	Total	840				40,000									
P03.22	Flow Rate (x 1000 gpd)	160				6			167	0.26	0.52	10	0.6%	38.2	
P03.21									499	0.77	1.54	15	0.6%	38.1	
	EX-2 Effective area				3.51										
	Flow Rate (x 1000 gpd)				10				10						
C03.20									509	0.79	1.57	(8)	(0.6%)	--	15
	1/2 of Remaining EX-3				18.15										
E12.13	Flow Rate (x 1000 gpd)				51				51	0.08	0.16	(8)	(0.6%)	27.8	
	EX-6				7.47										
	EX-7				12.09										
	Total				19.55										
	Flow Rate (x 1000 gpd)				55				55						
C03.13									614	0.95	1.90	(8)	(1.1%)	--	15 ¹

(): Existing pipe size and slope

--: Pipe overflow

1: Minimum pipe size is 12". However, pipe will be 15" to match upstream pipe size

Table 5-1D

Sewer Capacity - Phase D

unit		gpd/DU	gpd/1,000 sf	gpd/1,000 sf	gpd/ac	gpd/1,000 sf	gpd/room	gpd/1,000 sf			Peaking Factor				If existing pipe is insufficient
unit flow		191	46	172	2800	161	191	46			2				
Node	Tributary Area	Number of units	General Office (sf)	Medical Office (sf)	Existing Retail Area (ac)	Future Retail Area Cinema (sf)	Hotel (room)	Civic (sf)	Total Flow Rate (x 1000 gpd)	Total Flow Rate (cfs)	Peak Flow Rate (cfs)	Pipe Ø (in)	Pipe Slope	% Full	Required Pipe (in)
	EX-5				3.28										
E23.20	Flow Rate (x 1000 gpd)				9				9	0.01	0.03				
	Phase B Parcel 6	350				50,000	200								
P22.22	Flow Rate (x 1000 gpd)	67			0	8	38		113	0.18	0.35	8	0.6%	42.0	
	Phase C Parcel 3	233				20,000									
	Phase C Parcel 4	257				20,000									
	Phase C Parcel 5	286				25,000									
	1/2 of Remaining EX-3				18.15										
	Total	776			18.15										
	Flow Rate (x 1000 gpd)	148			51				199	0.31	0.62				
C19.21									321	0.50	0.99	12	0.6%	41.4	
	Phase A Parcel 1	229				10,000									
	Phase A Parcel 2	611				30,000									
	Total	840				40,000									
P03.22	Flow Rate (x 1000 gpd)	160				6			167	0.26	0.52	10	0.6%	38.2	
	Phase D Parcel 15	109				10,000									
	Phase D Parcel 16	141				10,000									
	Total	250				20,000									
	Flow Rate (x 1000 gpd)	48				3			51						
P03.21									539	0.83	1.67	15	0.6%	39.8	
	1/2 of Remaining EX-3				18.15										
	Phase D Parcel 9		115,000												
	Phase D Parcel 10	137				20,000									
	Total	137	115,000		18.15	20,000									
E12.13	Flow Rate (x 1000 gpd)	26	5		51	3			85	0.13	0.26	8 ¹	0.6%	35.8	

Sewer Capacity - Phase D															
unit		gpd/DU	gpd/1,000 sf	gpd/1,000 sf	gpd/ac	gpd/1,000 sf	gpd/room	gpd/1,000 sf			Peaking Factor				If existing pipe is insufficient
unit flow		191	46	172	2800	161	191	46			2				
Node	Tributary Area	Number of units	General Office (sf)	Medical Office (sf)	Existing Retail Area (ac)	Future Retail Area Cinema (sf)	Hotel (room)	Civic (sf)	Total Flow Rate (x 1000 gpd)	Total Flow Rate (cfs)	Peak Flow Rate (cfs)	Pipe Ø (in)	Pipe Slope	% Full	Required Pipe (in)
	Phase D Parcel 14	133				10,000									
	Remaining EX-7				11.51										
	Total	133			11.51	10,000									
	Flow Rate (x 1000 gpd)	25			32	2			59						
C03.13									684	1.06	2.12	15	1.1%	38.5	

(): Existing pipe size and slope

1: Existing pipe size and slope have enough capacity. New pipes are proposed to avoid potential future conflicts

Table 5-1E

Sewer Capacity - Phase E

unit		gpd/DU	gpd/1,000 sf	gpd/1,000 sf	gpd/ac	gpd/1,000 sf	gpd/room	gpd/1,000 sf			Peaking Factor					If existing pipe is insufficient
unit flow		191	46	172	2800	161	191	46			2					
Node	Tributary Area	Number of units	General Office (sf)	Medical Office (sf)	Existing Retail Area (ac)	Future Retail Area Cinema (sf)	Hotel (room)	Civic (sf)	Total Flow Rate (x 1000 gpd)	Total Flow Rate (cfs)	Peak Flow Rate (cfs)	Pipe Ø (in)	Pipe Slope	% Full	Required Pipe (in)	
	EX-5				3.28											
E23.20	Flow Rate (x 1000 gpd)				9				9	0.01	0.03					
	Phase B Parcel 6	350				50,000	200									
P22.22	Flow Rate (x 1000 gpd)	67				8	38		113	0.18	0.35	8	0.6%	42.0		
	Phase C Parcel 3	233				20,000										
	Phase C Parcel 4	257				20,000										
	Phase C Parcel 5	286				25,000										
	1/2 of Remaining EX-3				14.21											
	Total	776			14.21	65,000										
	Flow Rate (x 1000 gpd)	148			40	10			198	0.31	0.61					
C19.21									321	0.50	0.99	12	0.6%	41.4		
	Phase A Parcel 1	229				10,000										
	Phase A Parcel 2	611				30,000										
	Total	840				40,000										
P03.22	Flow Rate (x 1000 gpd)	160				6			167	0.26	0.52	10	0.6%	38.2		
	Phase D Parcel 16	141				10,000										
	1/2 of Phase E Parcel 18	238				49,609										
	Total	379				59,609										
	Flow Rate (x 1000 gpd)	72				10			82							
P03.21									570	0.88	1.76	15	0.6%	39.8		
	1/2 of Phase E Parcel 17	241				10,000										
	1/2 of Phase E Parcel 18	238				49,609										
	Total	479				59,609										
P07.18	Flow Rate (x 1000 gpd)	91				10			101	0.16	0.31	8	0.6%	39.4		

Sewer Capacity - Phase E															
unit		gpd/DU	gpd/1,000 sf	gpd/1,000 sf	gpd/ac	gpd/1,000 sf	gpd/room	gpd/1,000 sf			Peaking Factor				If existing pipe is insufficient
unit flow		191	46	172	2800	161	191	46			2				
Node	Tributary Area	Number of units	General Office (sf)	Medical Office (sf)	Existing Retail Area (ac)	Future Retail Area Cinema (sf)	Hotel (room)	Civic (sf)	Total Flow Rate (x 1000 gpd)	Total Flow Rate (cfs)	Peak Flow Rate (cfs)	Pipe Ø (in)	Pipe Slope	% Full	Required Pipe (in)
	1/2 of Phase E Parcel 17	241				10,000									
	Phase D Parcel 15	109				10,000									
	Total	350				20,000									
	Flow Rate (x 1000 gpd)	67				3			70						
C03.18									741	1.15	2.29	15	0.6%	47.5	
	1/2 of Remaining EX-3				14.12										
	Phase D Parcel 9		115,000												
	Phase D Parcel 10	137				20,000									
	Total	137	115,000		14.12	20,000									
E12.13	Flow Rate (x 1000 gpd)	26	5		40	3			74	0.11	0.23	8	0.6%	33.5	
	Phase D Parcel 14	133				10,000									
	EX-7				11.51										
	Total	133			11.51	10,000									
	Flow Rate (x 1000 gpd)	25			32	2			59						
E03.13									874	1.35	2.71	15	1.1%	44.1	

(): Existing pipe size and slope

Table 5-1F

Sewer Capacity - Phase F

unit		gpd/DU	gpd/1,000 sf	gpd/1,000 sf	gpd/ac	gpd/1,000 sf	gpd/room	gpd/1,000 sf			Peaking Factor					If existing pipe is insufficient
unit flow		191	46	172	2800	161	191	46			2					
Node	Tributary Area	Number of units	General Office (sf)	Medical Office (sf)	Existing Retail Area (ac)	Future Retail Area Cinema (sf)	Hotel (room)	Civic (sf)	Total Flow Rate (x 1000 gpd)	Total Flow Rate (cfs)	Peak Flow Rate (cfs)	Pipe Ø (in)	Pipe Slope	% Full	Required Pipe	
	Phase B Parcel 6	350				50,000	200									
	Phase C Parcel 5	286				25,000										
	Phase F Parcel 7	288				60,000										
	1/2 of Phase F Parcel 22	33				80,000										
	Total	957				215,000	200									
P22.22	Flow Rate (x 1000 gpd)	183				35	38		256	0.40	0.79	10	0.006	48.2		
	Phase C Parcel 3	233				20,000										
	Phase C Parcel 4	257				20,000										
	Phase F Parcel 18	157				32,781										
	1/2 of Phase F Parcel 21	354				73,500										
	Total	1,001				146,281										
	Flow Rate (x 1000 gpd)	191				24										
C19.21									470	0.73	1.46	15	0.6%	37.0		
	Phase A Parcel 1	229				10,000										
	Phase A Parcel 2	611				30,000										
	Phase D Parcel 16	141				10,000										
	1/2 of Phase E Parcel 18	238				49,609										
	Total	1,219				99,609										
P03.21	Flow Rate (x 1000 gpd)	233				16			249	1.11	2.23	15	0.6%	46.8		
	1/2 of Phase E Parcel 17	241				10,000										
	1/2 of Phase E Parcel 18	238				49,609										
	Total	479				59,609										
P07.18	Flow Rate (x 1000 gpd)	91				10			101	0.16	0.31	8	0.6%	39.4		
	1/2 of Phase E Parcel 17	241				10,000										
	Phase D Parcel 15	109				10,000										
	Total	350				20,000										
	Flow Rate (x 1000 gpd)	67				3										
C03.18									890	1.38	2.76	18	0.6%	40.1		

Sewer Capacity - Phase F															
unit		gpd/DU	gpd/1,000 sf	gpd/1,000 sf	gpd/ac	gpd/1,000 sf	gpd/room	gpd/1,000 sf			Peaking Factor				If existing pipe is insufficient
unit flow		191	46	172	2800	161	191	46			2				
Node	Tributary Area	Number of units	General Office (sf)	Medical Office (sf)	Existing Retail Area (ac)	Future Retail Area Cinema (sf)	Hotel (room)	Civic (sf)	Total Flow Rate (x 1000 gpd)	Total Flow Rate (cfs)	Peak Flow Rate (cfs)	Pipe Ø (in)	Pipe Slope	% Full	Required Pipe
	1/2 of Phase F Parcel 8	50				12,500									
	1/2 of Phase F Parcel 20	382				80,000									
	1/2 of Phase F Parcel 21	354				73,500									
	1/2 of Phase F Parcel 22	33				80,000									
	Total	819				246,000									
P18.17	Flow Rate (x 1000 gpd)	156				40			196	0.30	0.61	8	2.0%	41.0	10
	1/2 of Phase F Parcel 8	50				12,500									
	1/2 of Phase F Parcel 20	382				80,000									
	Total	432				92,500									
	Flow Rate (x 1000 gpd)	83				15			97						
P18.13									293	0.45	0.91	12	0.6%	39.5	
	Phase D Parcel 9		115,000												
	Phase D Parcel 10	137				20,000									
	Phase F Parcel 19	792	60,000			80,000		75,000							
	Total	929	175,000			100,000		75,000							
	Flow Rate (x 1000 gpd)	177	8			16		3	205						
E12.13									498	0.77	1.54	8	0.6%	--	15
	Phase D Parcel 14	133				10,000									
	Remaining EX-7				11.51										
	Total	133			11.51	10,000									
	Flow Rate (x 1000 gpd)	25			32	2			59						
E03.13									1,448	2.24	4.48	18	1.1%	44.5	

() : Existing pipe size and slope

-- : Pipe overflow

Table 5-1G

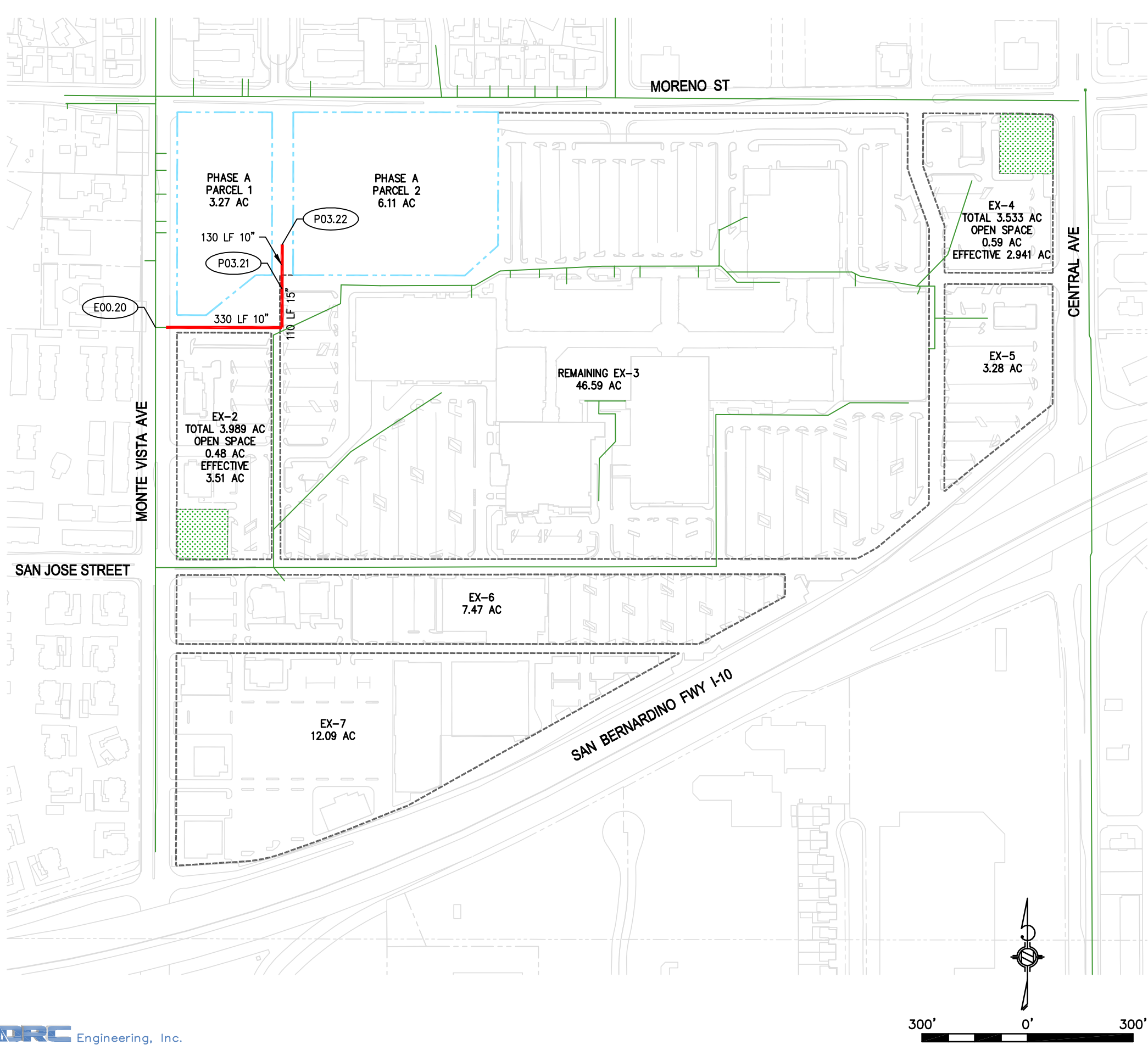
Sewer Capacity - Phase G

unit		gpd/DU	gpd/1,000 sf	gpd/1,000 sf	gpd/ac	gpd/1,000 sf	gpd/room	gpd/1,000 sf			Peaking Factor				If existing pipe is insufficient
unit flow		191	46	172	2800	161	191	46			2				
Node	Tributary Area	Number of units	General Office (sf)	Medical Office (sf)	Existing Retail Area (ac)	Futuer Retail Area Cinema (sf)	Hotel (room)	Civic (sf)	Total Flow Rate (x 1000 gpd)	Total Flow Rate (cfs)	Peak Flow Rate (cfs)	Pipe Ø (in)	Pipe Slope	% Full	Required Pipe
	Phase B Parcel 6	350				50,000	200								
	Phase C Parcel 5	286				25,000									
	Phase F Parcel 7	288				60,000									
	1/2 of Phase F Parcel 22	33				80,000									
	Total	957				215,000	200								
P22.22	Flow Rate (x 1000 gpd)	183				35	38		256	0.40	0.79	10	0.006	48.2	
	Phase C Parcel 3	233				20,000									
	Phase C Parcel 4	257				20,000									
	Phase F Parcel 18	157				32,781									
	1/2 of Phase F Parcel 21	354				73,500									
	Total	1,001				146,281									
	Flow Rate (x 1000 gpd)	191				24		215							
C19.21								470	0.73	1.46	15	0.6%	37.0		
	Phase A Parcel 1	229				10,000									
	Phase A Parcel 2	611				30,000									
	Phase D Parcel 16	141				10,000									
	1/2 of Phase E Parcel 18	238				49,609									
	Total	1,219				99,609									
P03.21	Flow Rate (x 1000 gpd)	233				16		249	719	1.11	2.23	15	0.6%	46.8	
	1/2 of Phase E Parcel 17	241				10,000									
	1/2 of Phase E Parcel 18	238				49,609									
	Total	479				59,609									
P07.18	Flow Rate (x 1000 gpd)	91				10		101	0.16	0.31	8	0.6%	39.4		
	1/2 of Phase E Parcel 17	241				10,000									
	Phase D Parcel 15	109				10,000									
	Total	350				20,000									
	Flow Rate (x 1000 gpd)	67				3		70							
C03.18								890	1.38	2.76	18	0.6%	40.1		
	1/2 of Phase F Parcel 8	50				12,500									
	1/2 of Phase F Parcel 20	382				80,000									

Sewer Capacity - Phase G															
unit		gpd/DU	gpd/1,000 sf	gpd/1,000 sf	gpd/ac	gpd/1,000 sf	gpd/room	gpd/1,000 sf			Peaking Factor				If existing pipe is insufficient
unit flow		191	46	172	2800	161	191	46			2				
Node	Tributary Area	Number of units	General Office (sf)	Medical Office (sf)	Existing Retail Area (ac)	Futuer Retail Area Cinema (sf)	Hotel (room)	Civic (sf)	Total Flow Rate (x 1000 gpd)	Total Flow Rate (cfs)	Peak Flow Rate (cfs)	Pipe Ø (in)	Pipe Slope	% Full	Required Pipe
	1/2 of Phase F Parcel 21	354				73,500									
	1/2 of Phase F Parcel 22	33				80,000									
	Total	819				246,000									
P18.17	Flow Rate (x 1000 gpd)	156				40			196	0.30	0.61	8	2.0%	41.0	10
	1/2 of Phase F Parcel 8	50				12,500									
	1/2 of Phase F Parcel 20	382				80,000									
	Total	432				92,500									
	Flow Rate (x 1000 gpd)	83				15			97						
P18.13									293	0.45	0.91	12	0.6%	39.5	
	Phase D Parcel 9		115,000												
	Phase D Parcel 10	137				20,000									
	Phase F Parcel 19	792	60,000			80,000		75,000							
	Total	929	175,000			100,000		75,000							
	Flow Rate (x 1000 gpd)	177	8			16		3	205						
E12.13									498	0.77	1.54	15	0.6%	38.1	
	Phase D Parcel 14	133				10,000									
	Flow Rate (x 1000 gpd)	25				2			27						
E03.13									1,416	2.19	4.38	18	1.1%	44.0	
	Phase G Parcel 11			106,000											
	Phase G Parcel 12		155,000			10,000									
	Phase G Parcel 13			94,800		10,000									
	Total		155,000	200,800		20,000									
P00.08	Flow Rate (x 1000 gpd)		7	35		3			45	0.07	0.14	8	0.6%	26.0	

(): Existing pipe size and slope

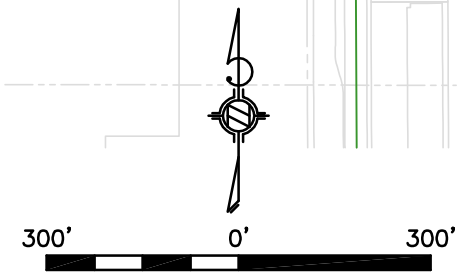
--: Pipe overflow

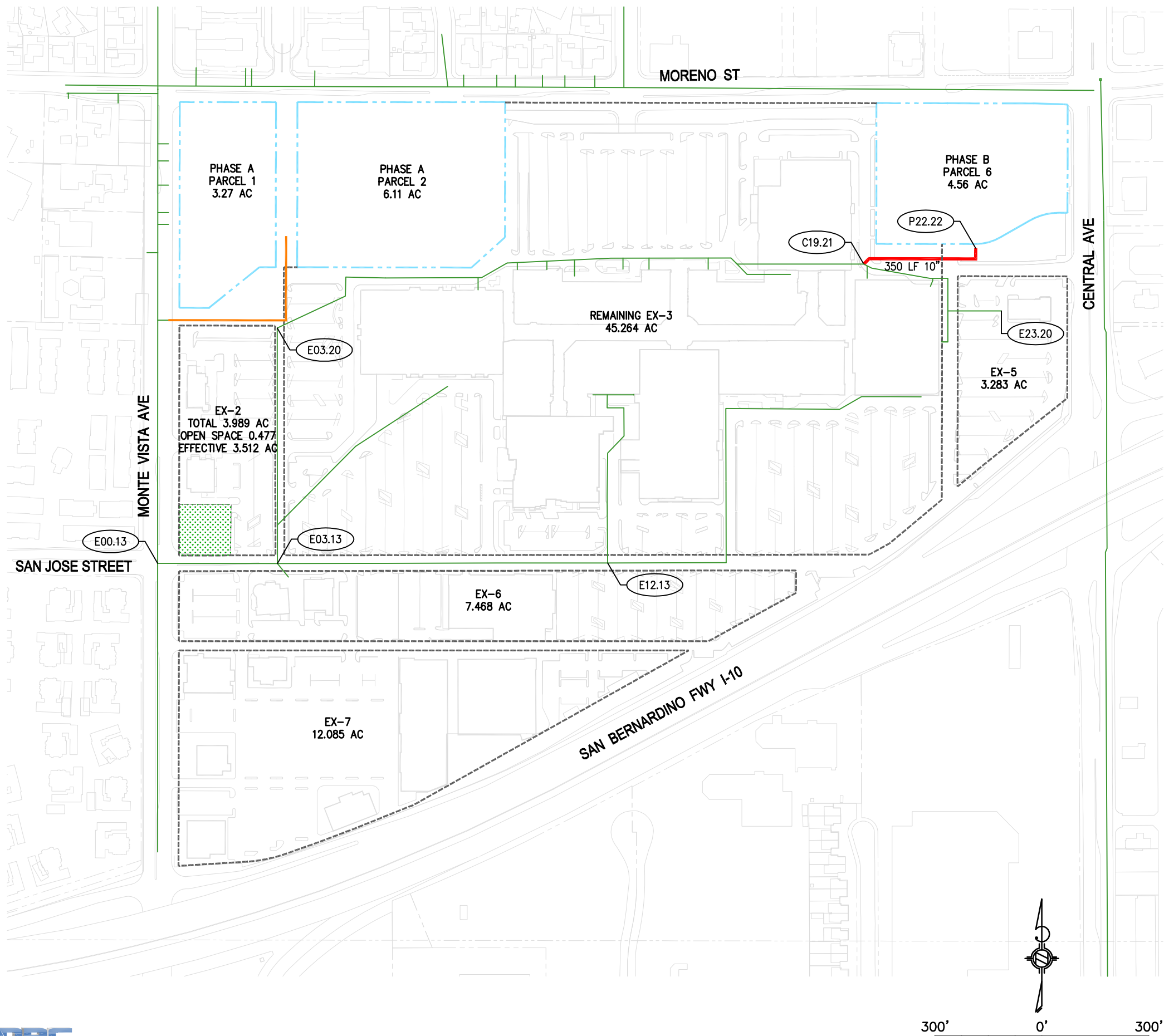


LEGEND

- EXISTING SEWER LINE
- PHASE A NEW SEWER LINE
- - - PHASE BOUNDARY
- - - EXISTING TRIBUTARY AREA BOUNDARY
- XXX.XX NODE ID
- OPEN SPACE

Pipe Ø (in)	Phase A				
	8	10	12	15	18
Phase A New Pipe (ft)		460		110	
Total Pipe Phase A (ft)		460		110	

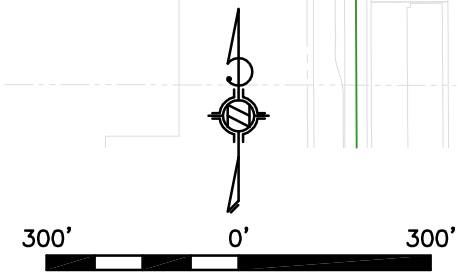


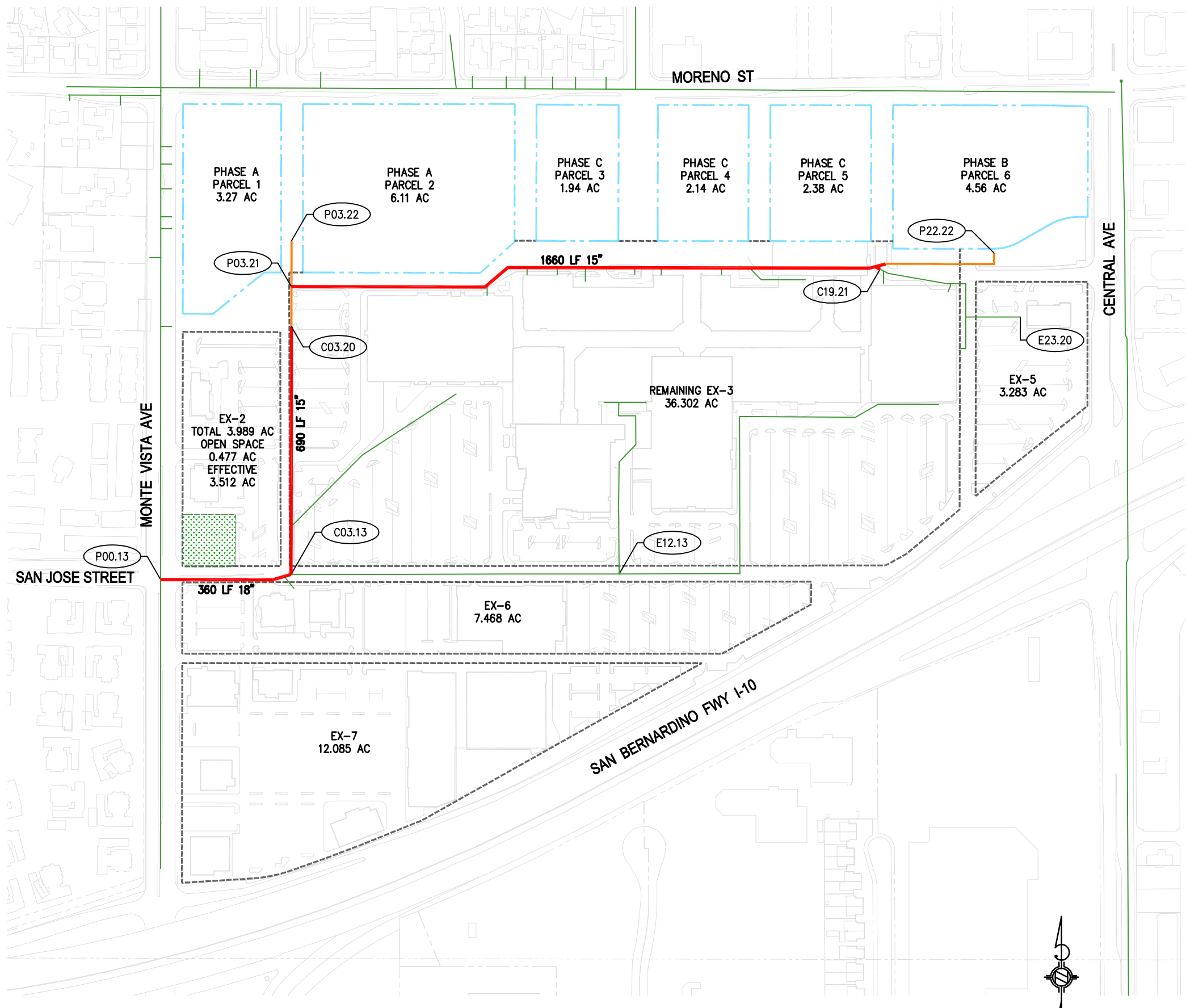


LEGEND

- EXISTING SEWER LINE
- PHASE B NEW SEWER LINE
- PREVIOUS PHASE SEWER LINE
- PHASE BOUNDARY
- EXISTING TRIBUTARY AREA BOUNDARY
- XXX.XX NODE ID
- OPEN SPACE

Pipe Ø (in)	Phase B				
	8	10	12	15	18
Phase B New Pipe (ft)		350			
Total Pipe Phases A-B (ft)		810		110	

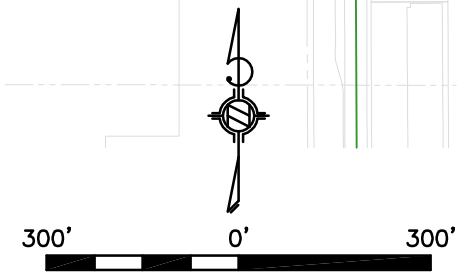


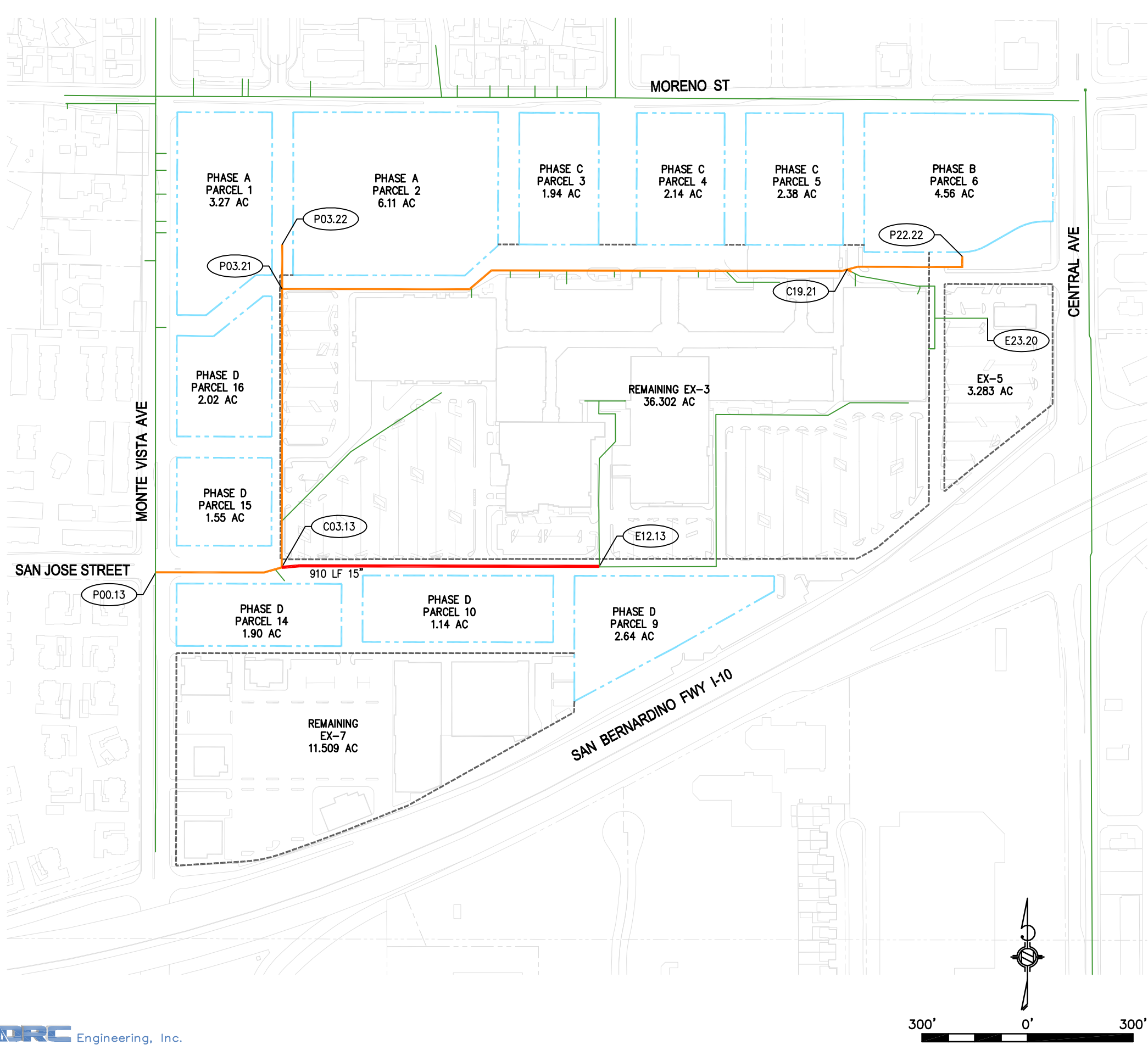


LEGEND

- EXISTING SEWER LINE
- PHASE C NEW SEWER LINE
- PREVIOUS PHASES SEWER LINE
- PHASE BOUNDARY
- EXISTING TRIBUTARY AREA BOUNDARY
- XXX.XX NODE ID
- OPEN SPACE

Pipe Ø (in)	Phase C				
	8	10	12	15	18
Phase C New Pipe (ft)				2,350	360
Total Pipe Phases A-C (ft)		810		2,460	360

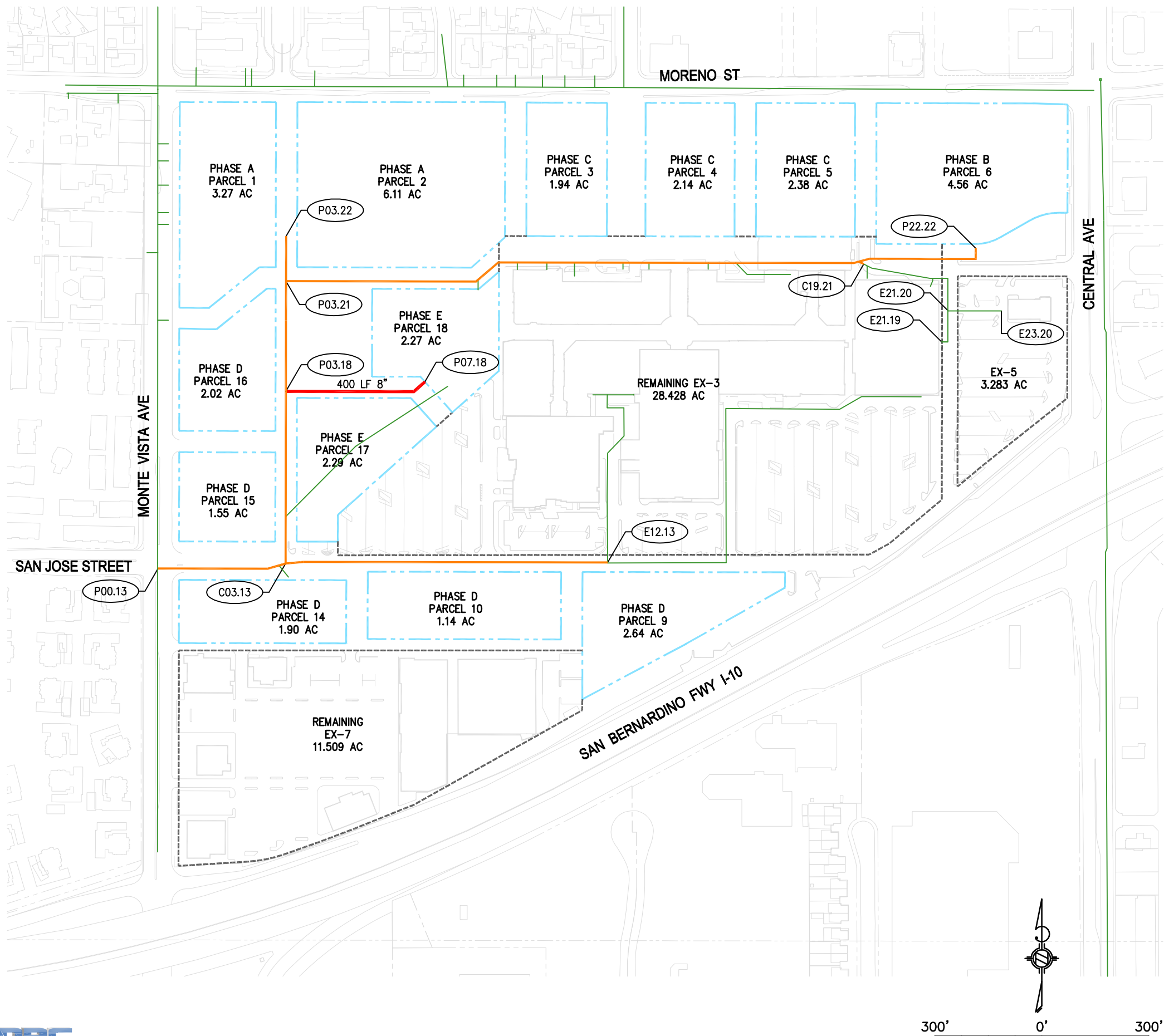




LEGEND

- EXISTING SEWER
- PHASE D NEW SEWER LINE
- PREVIOUS PHASE SEWER LINE
- PHASE BOUNDARY
- EXISTING TRIBUTARY AREA BOUNDARY
- XXX.XX NODE ID

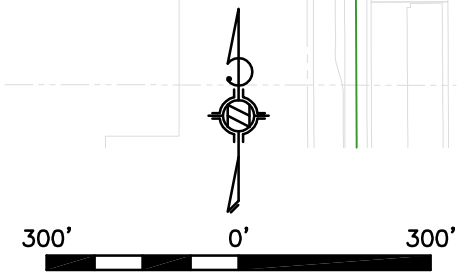
Pipe Ø (in)	Phase D				
	8	10	12	15	18
Phase D				900	
New Pipe (ft)				900	
Total Pipe		810		3,360	360
Phases A-D (ft)		810		3,360	360

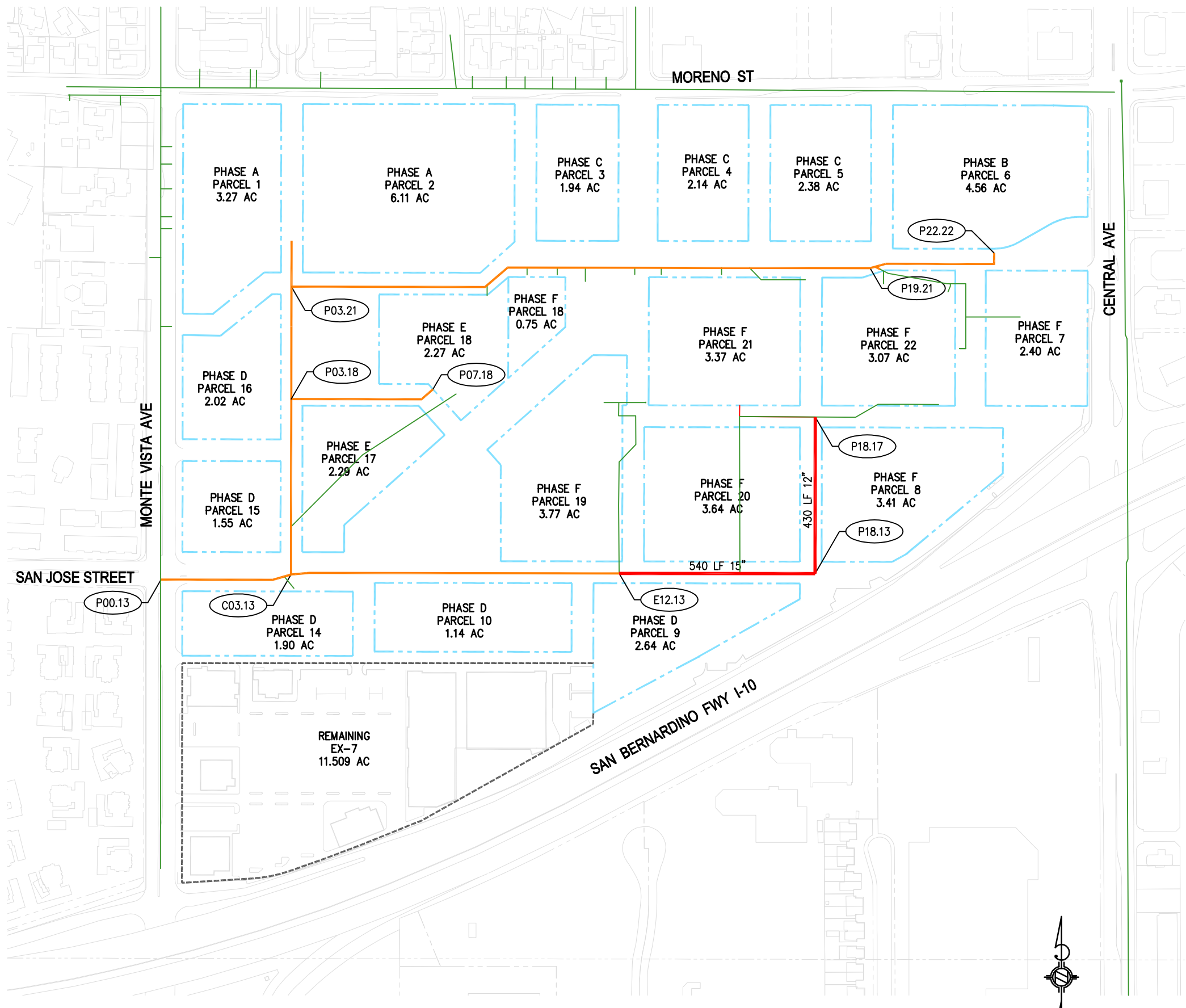


LEGEND

- EXISTING SEWER LINE
- PHASE E NEW SEWER LINE
- PREVIOUS PHASE SEWER LINE
- - - PHASE BOUNDARY
- - - EXISTING TRIBUTARY AREA BOUNDARY
- XXX.XX NODE ID

	Phase E				
Pipe Ø (in)	8	10	12	15	18
Phase E New Pipe (ft)	400				
Total Pipe Phases A-E (ft)	400	810		3,360	360

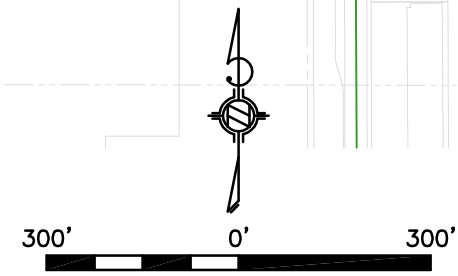


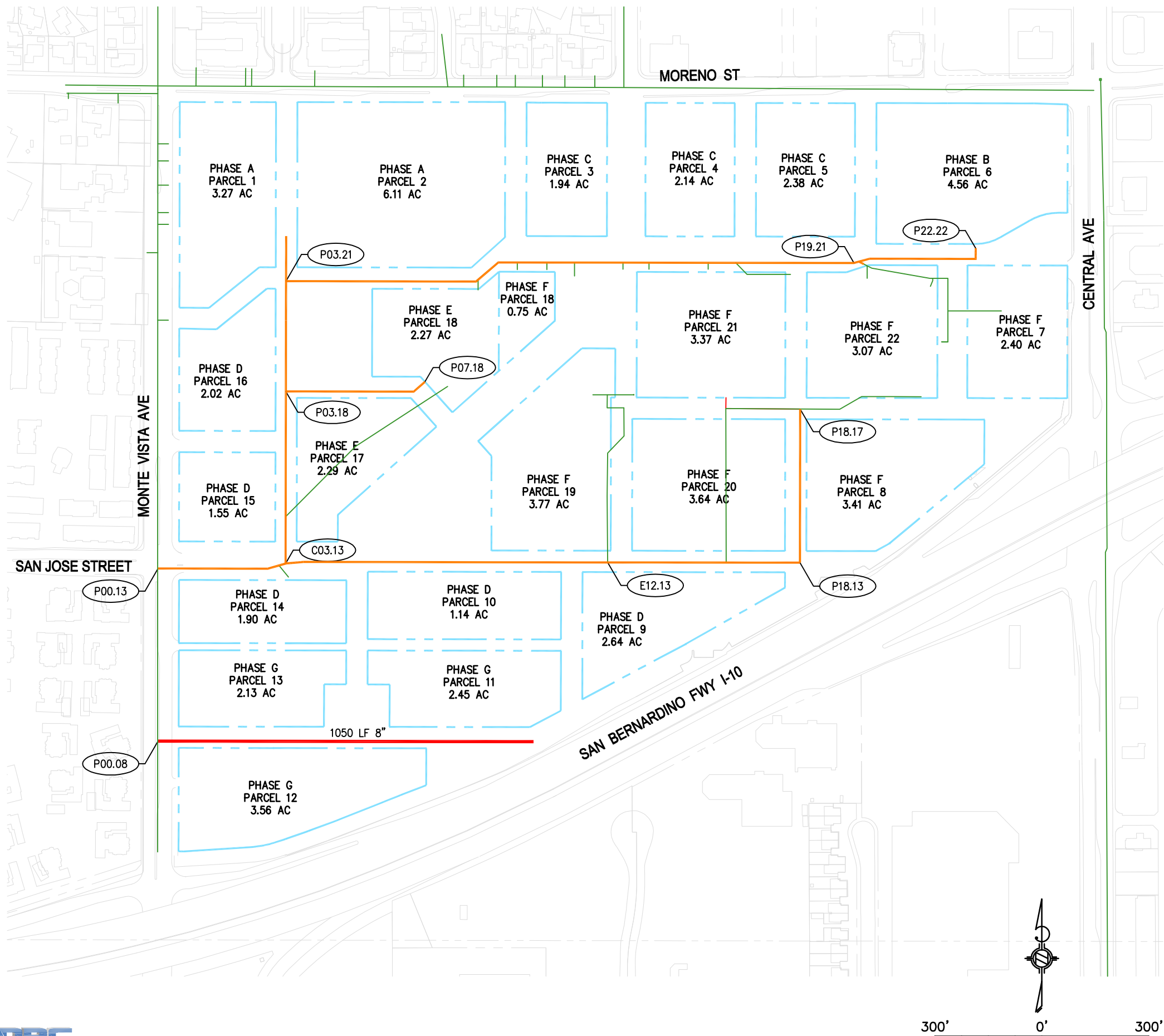


LEGEND

- EXISTING SEWER LINE
- PHASE F NEW SEWER LINE
- PREVIOUS PHASE SEWER LINE
- - - PHASE BOUNDARY
- - - EXISTING TRIBUTARY AREA BOUNDARY
- XXX.XX NODE ID

Phase F					
Pipe Ø (in)	8	10	12	15	18
Phase F New Pipe (ft)			430	540	
Total Pipe Phases A-F (ft)	400	810	430	3,900	360





LEGEND

- EXISTING SEWER LINE
- PHASE G NEW SEWER LINE
- PREVIOUS PHASE SEWER LINE
- - - PHASE BOUNDARY
- - - EXISTING TRIBUTARY AREA BOUNDARY
- XXX.XX NODE ID

	Phase G				
Pipe Ø (in)	8	10	12	15	18
Phase G New Pipe (ft)	1,050				
Total Pipe Phases A-G (ft)	1,450	810	430	3,900	360

Water

The project site is located within the jurisdiction of the Monte Vista Water District (MVWD). As outlined in the June 2016 Urban Water Management Plan (UWMP) the district currently has a total ground water well production capacity of approximately 30 MGD (Million Gallons per Day) (Table 2-3 Active Ground Water Wells, Monte Vista Water District; Page 2-7). The site currently has four main points of connection to the public Monte Vista municipal water supply system via 12-inch ductile iron laterals. Service is connected on the north to an existing 30-inch line in Moreno Street, east to an existing 12-inch line in Central Avenue, and west to an existing 12-inch line in Moreno Avenue at the intersection of San Jose Street and approximately 250' south.

Onsite water service is maintained through a 12-inch ductile iron system that runs a loop around the site. Individual tenant meters and fire services are supplied from the 12-inch system.

5.1 Fire Water

A fire flow report (Appendix 6-1) was provided by Monte Vista Water District on October 10, 2016 for the Plan area. The report shows an available flow of 4995 gpm at 20 psi from the water line located between the existing parking structure along Moreno Street and the main plaza building.

The largest footprint listed in Montclair Place Development Yield Study is 160,000 SF (Retail in Parcel 20). According to California Fire Code Appendix B Fire-Flow Requirements for Buildings, Table B105.1(2), see below, the required fire flow for 160,000 SF is 7,250 gpm for 4 hours. With sprinkler system, the required fire flow can be reduced by 50%, which will bring the required fire flow to be 3,625 gpm. The existing water supply system should be sufficient to meet the fire flow requirement.

5.2 Potable Water

The domestic water demands are calculated based on the Land Use Unit Demands from Monte Vista Water District 2015 Urban Water Management Plan Final Draft (June 2016), Appendix D, Monte Vista WD table and the following information:

- Parcel 18 is included in both phase E and phase F. The residential units and retail square footage are divided between phase E and phase F according the acreage ratio of each phase
- Per Appendix D of Monte Vista Water District 2015 Urban Water Management Plan Final Draft (June 2016), LUDS for Residential Very High (25+) is 11.14 af/ac/yr. There is no LUDS for residential over 25 DU/AC listed for Monte Vista Area. In the other areas listed in the Appendix D, the ratio of Residential Very High (25+) to Residential High (15-24) range from 1.32 to 1.69. Ontario area has the highest ratio and is adjacent to Montclair, the ratio of 1.69 is used for Montclair area with the projected water demand for 2040. The LUDS of $6.88 \times 1.69 = 11.63$ af/ac/yr is used for Montclair Residential Very High (25+).
- Per City of Montclair Sewer Master Plan, Final Draft June 2017, Table 3-4, the land use sewer unit flow for office is 28.6% of the sewer unit flow of commercial land use. Applying the 28.6% ratio to water demand, the LUDS for office is 0.67 af/ac/yr.
- Per Appendix D of Monte Vista Water District 2015 Urban Water Management Plan Final Draft (June 2016), LUDS for Commercial for 2040 is 2.34 af/ac/yr.

- Per City of Montclair Sewer Master Plan, Final Draft June 2017, Table 3-4, hospital has a land use sewer unit flow approximately the same as commercial. The LUDS for medical office is approximated as 2.34 af/ac/yr.
- Cinema uses the same LUDS as commercial, 2.34 af/ac/yr.
- Hotel uses the same LUDS as Residential Very High (25+), 18.83 af/ac/yr.
- Civic uses the same LUDS as Office, 0.67 af/ac/yr.

Table 6-1 listed the domestic water demand for the ultimate condition in the redevelopment of the Plan area. After Phase G is complete, the domestic water demand is estimated 92 gpm in average. There will be peaking demand to be considered. However, since the fire flow report shows an available supply of 4995 gpm at 20 psi, it's concluded that the water supply is sufficient, provided booster pumps will probably be needed for the upper floors.

Since the water supply is sufficient, the new water lines are proposed for the reason of matching the proposed phase layout and avoid potential future conflicts.

Monte Vista Water District 2015 Urban Water Management Plan Final Draft (June 2016).

Appendix D Land Use Unit Demands

Monte Vista WD	Final LUDS (af/ac/yr)					
	2015	2020	2025	2030	2035	2040
Residential Very Low (<1 - 2)	1.36	1.37	1.39	1.40	1.42	1.44
Residential Low (3 - 7)	2.25	2.28	2.31	2.33	2.36	2.38
Residential Medium (8 - 14)	4.99	5.05	5.10	5.16	5.22	5.28
Residential High (15 - 24)	10.53	10.65	10.78	10.90	11.02	11.14
Residential Very High (25+)	-	-	-	-	-	-
Commercial	2.28	2.29	2.30	2.32	2.33	2.34
Industrial	0.69	0.70	0.70	0.71	0.71	0.72
Public/Institutional	2.55	2.57	2.58	2.60	2.61	2.63
Parks, Schools, Irrigation	5.04	5.10	5.16	5.22	5.28	5.33
Agriculture	0.36	0.37	0.37	0.38	0.38	0.38
Unique Water User #1	5.97	6.01	6.04	6.08	6.11	6.15
Unique Water User #2	46.45	46.73	47.01	47.29	47.57	47.84
Unique Water User #3	-	-	-	-	-	-
Unique Water User #4	-	-	-	-	-	-

California Fire Code Appendix B Fire-Flow Requirements for Buildings

**TABLE B105.1(2)
REFERENCE TABLE FOR TABLES B105.1(1) AND B105.2**

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 m², 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.

Table 6-1

POTABLE WATER DEMAND

Phase data Source: CIM MONTCLAIR PLACE DEVELOPMENT YIELD STUDY 11.21.2019

Phase	PARCEL INFORMATION		Residential Density Potential (DU/AC)	General Office	Medical Office	Retail Area	Cinema	Hotel	Civic	
	Parcel Number	Area (Acres)								
A	1	3.27	70			✓				
A	2	6.11	100			✓				
B	6	4.56	100			✓		✓		
C	3	1.94	120			✓				
C	4	2.14	120			✓				
C	5	2.38	120			✓				
D	9	2.64		✓						
D	10	1.14	120			✓				
D	14	1.90	70			✓				
D	15	1.55	70			✓				
D	16	2.02	70			✓				
E	17	2.29	210			✓				
E*	18	2.27	158			✓				
F	7	2.40	120			✓				
F	8	3.41				✓				
F*	18	0.75	52			✓				
F	19	3.77	210	✓		✓			✓	
F	20	3.64	210			✓				
F	21	3.37	210			✓				
F	22	3.07				✓	✓			
G	11	2.45			✓					
G	12	3.56		✓		✓				
G	13	2.13			✓	✓				
Total Area (Ac)		62.76	45.50	9.97	4.58	57.67	3.07	4.56	3.77	
Land Use Unit Demand (af/ac/yr)			18.83 ¹	0.67 ²	2.34 ³	2.34 ⁴	2.34 ⁵	18.83 ⁶	0.67 ⁷	
Total Demand (af/yr)			857	7	11	135	7	86	3	
Total Demand (af/yr)			1,105							
Total Demand (gpm)			92							

*: Parcel 18 is included in both phase E and phase F. The residential units and retail square footage are divided between phase E and phase F according the acreage ratio of each phase

1: Per Appendix D of Monte Vista Water District 2015 Urban Water Management Plan Final Draft (June 2016), LUDS for Residential Very High (25+) is 11.14 af/ac/yr. There is no LUDS for residential over 25 DU/AC listed for Monte Vista Area. In the other areas listed in the Appendix D, the ratio of Residential Very High (25+) to Residential High (15-24) range from 1.32 to 1.69. Ontario area has the highest ratio and is adjacent to Montclair, the ratio of 1.69 is used for Montclair area with the projected water demand for 2040. The LUDS of 6.88x1.69=18.83 af/ac/yr is used for Montclair Residential Very High (25+).

2: Per City of Montclair Sewer Master Plan, Final Draft June 2017, Table 3-4, the land use sewer unit flow for office is 28.6% of the sewer unit flow of commercial land use. Applying the 28.6% ratio to water demand, the LUDS for office is 0.67 af/ac/yr.

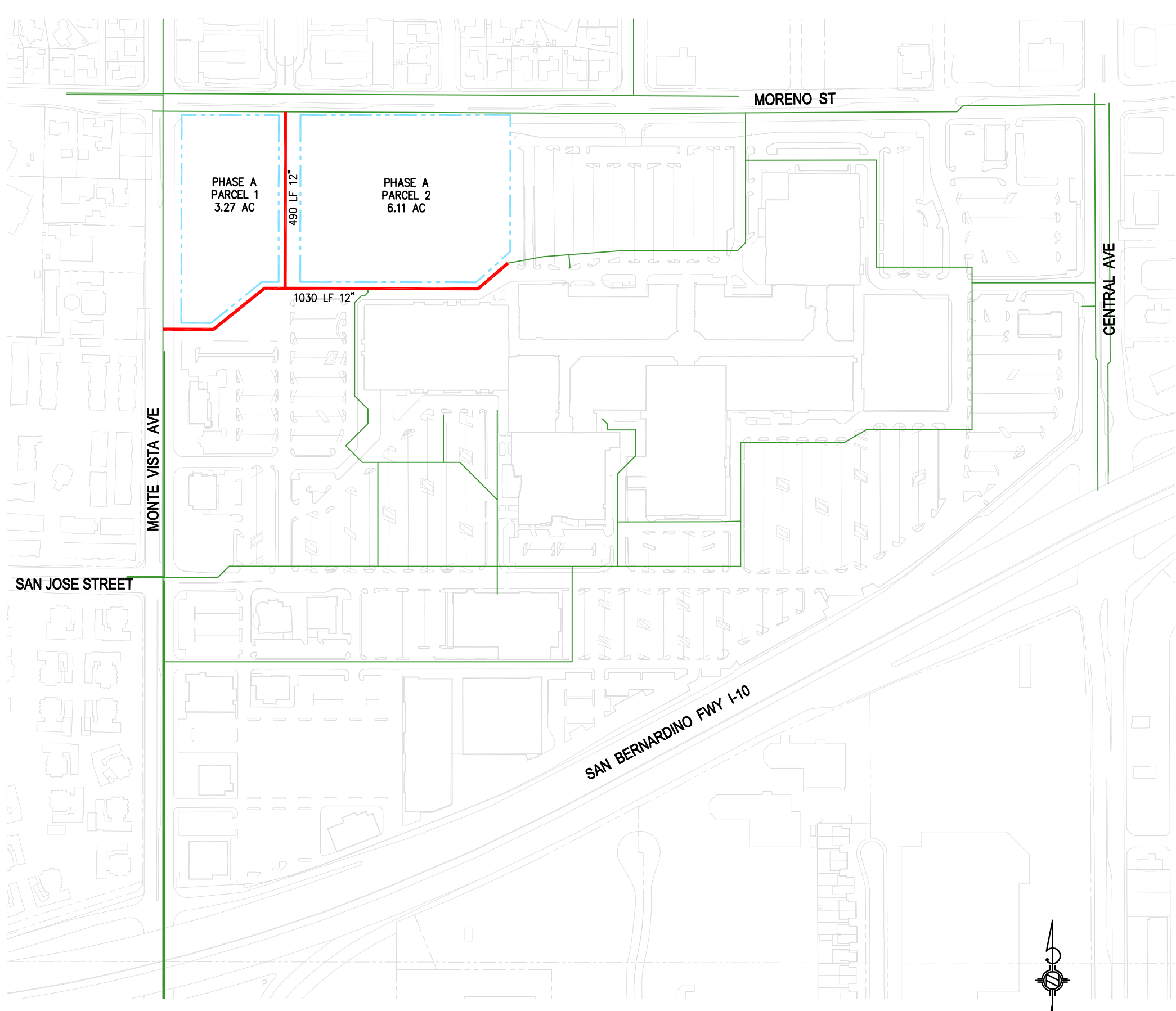
3: Per City of Montclair Sewer Master Plan, Final Draft June 2017, Table 3-4, hospital has a land use sewer unit flow approximately the same as commercial. The LUDS for medical office is approximated as 2.34 af/ac/yr.

4: Per Appendix D of Monte Vista Water District 2015 Urban Water Management Plan Final Draft (June 2016), LUDS for Commercial for 2040 is 2.34 af/ac/yr.

5: Cinema uses the same LUDS as commercial, 2.34 af/ac/yr.

6: Hotel uses the same LUDS as Residential Very High (25+), 18.83 af/ac/yr.

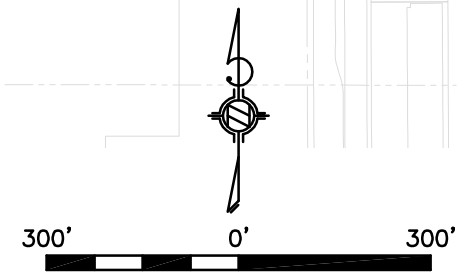
7: Civic uses the same LUDS as Office, 0.67 af/ac/yr.

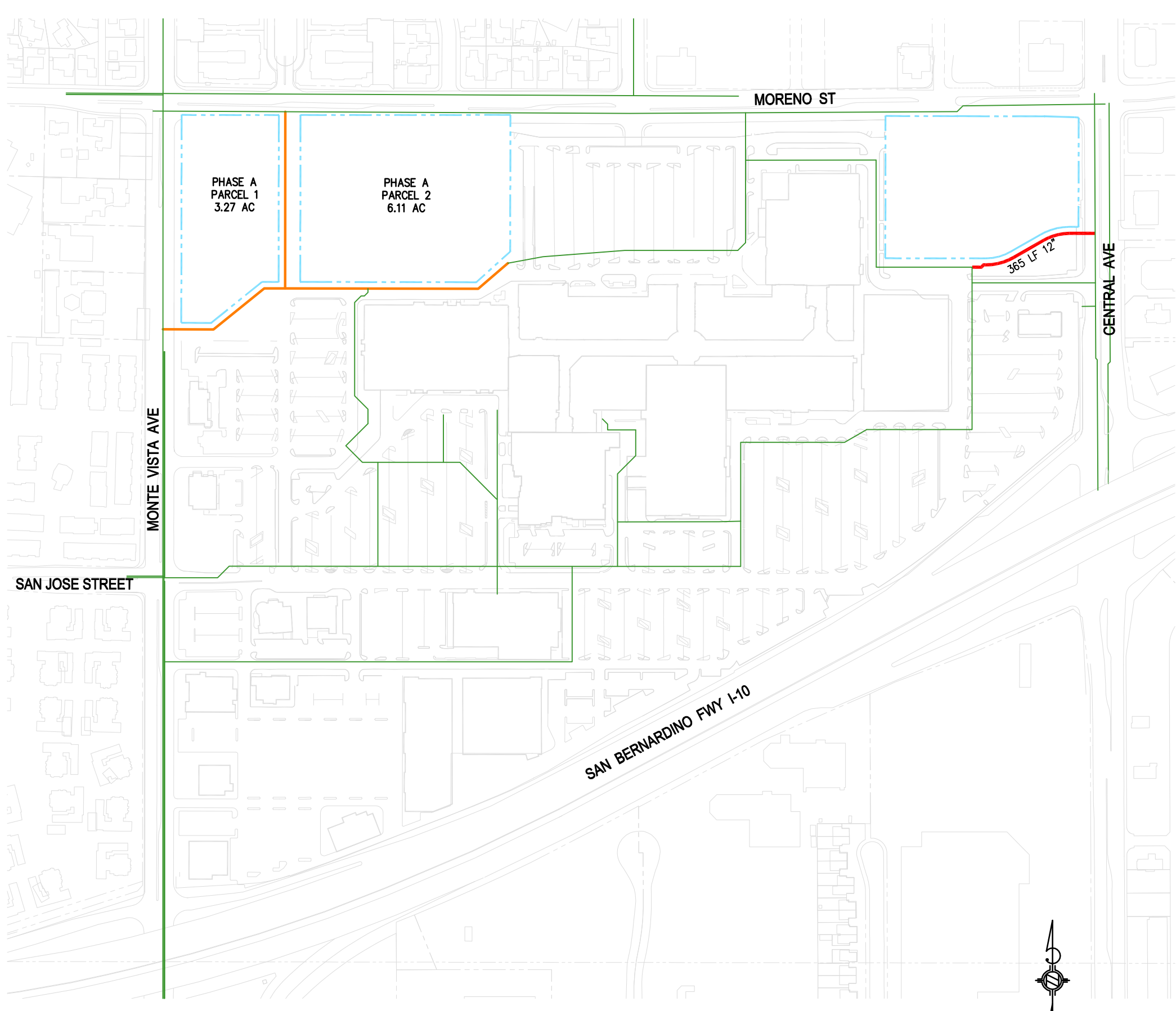


LEGEND

- EXISTING WATER LINE
- PHASE A NEW WATER LINE
- - - PHASE BOUNDARY

Phase A	
Pipe Ø (in)	12
Phase A New Pipe (ft)	1,520
Phase A Replacement Pipe (ft)	
Total Pipe Phase A (ft)	1,520

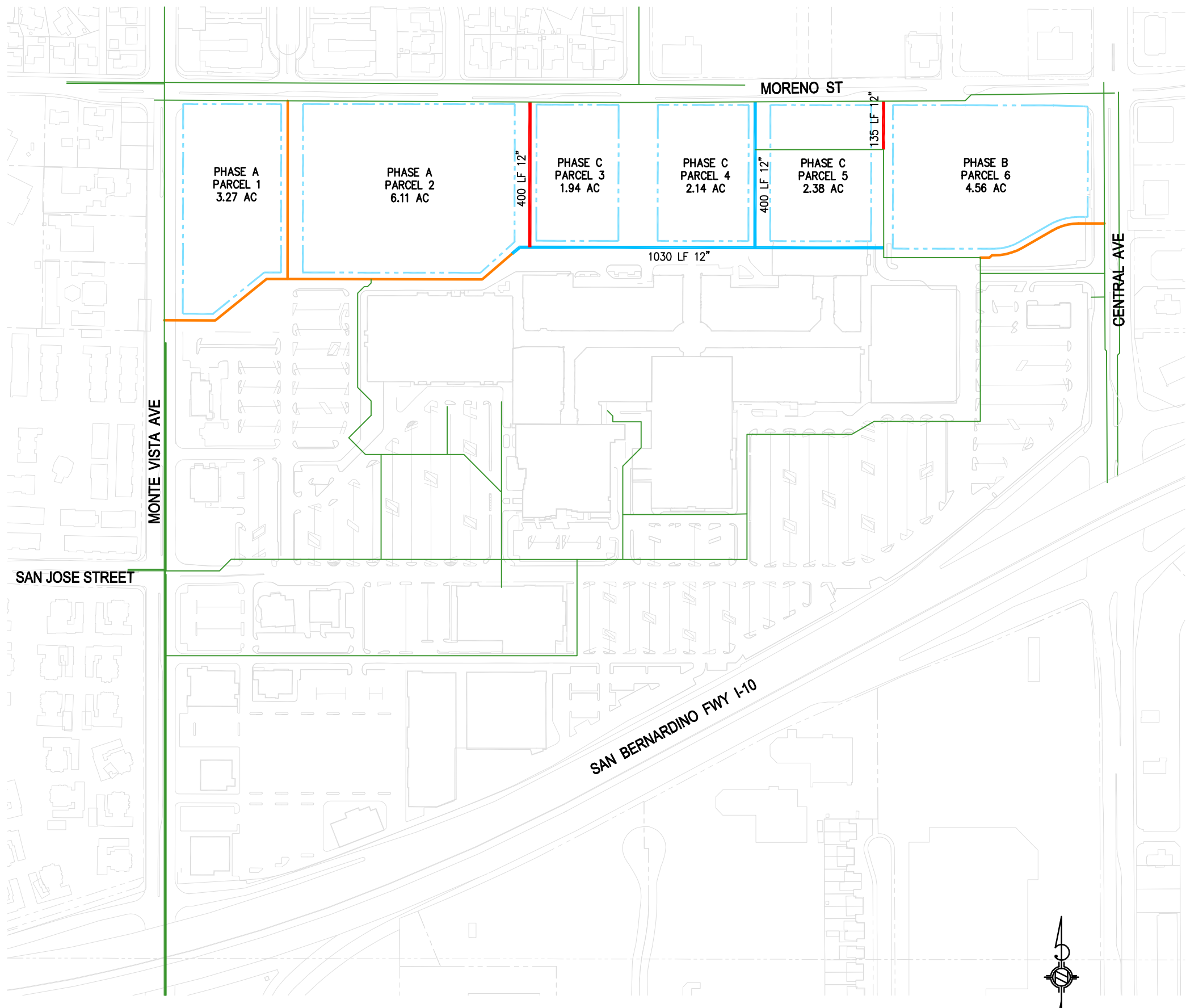




LEGEND

- EXISTING WATER LINE
- PHASE B NEW WATER LINE
- PREVIOUS PHASE WATER LINE
- PHASE BOUNDARY

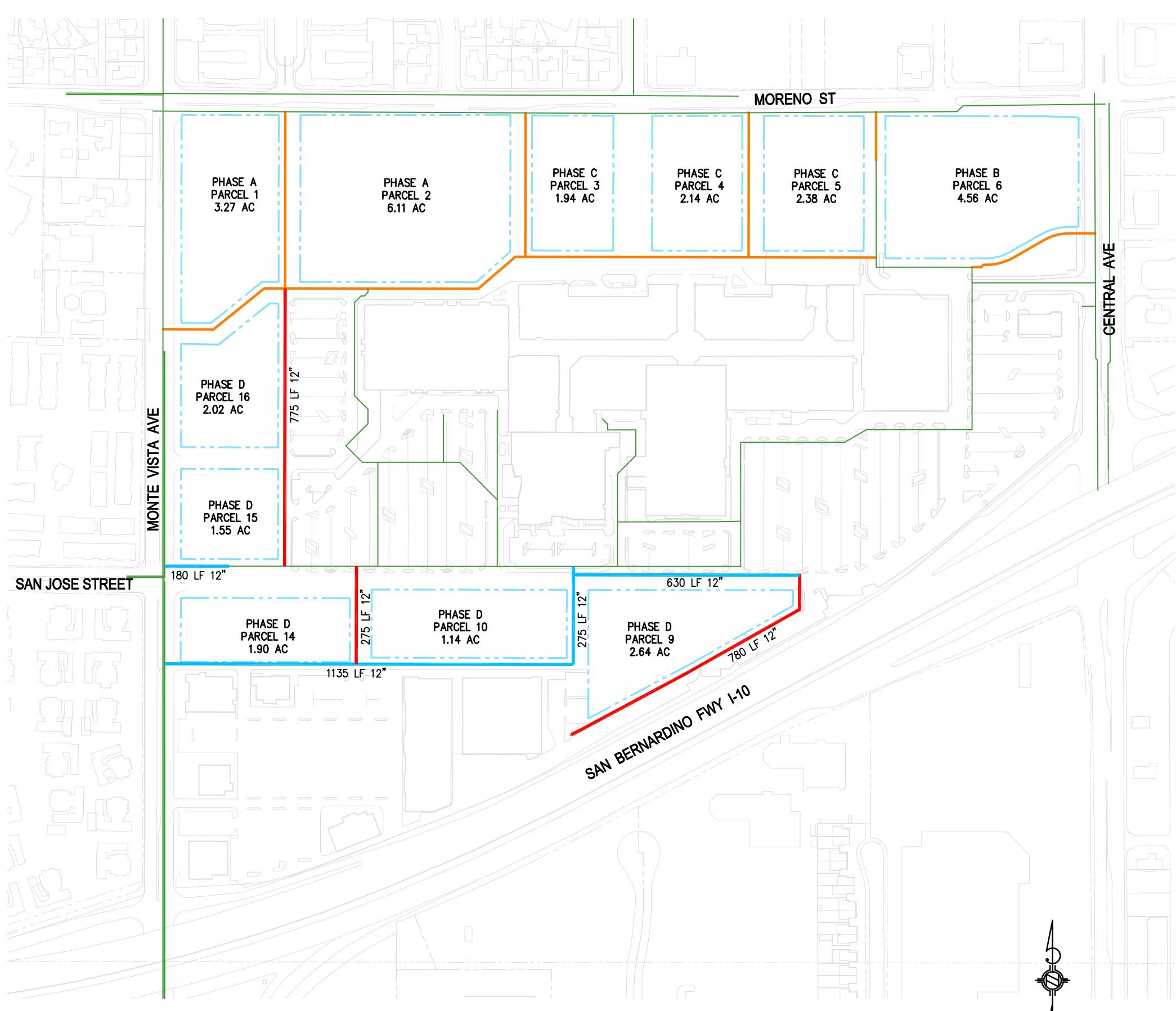
Phase B	
Pipe Ø (in)	12
Phase B New Pipe (ft)	365
Phase B Replacement Pipe (ft)	
Total Pipe Phases A-B (ft)	1,885



LEGEND

- EXISTING WATER LINE
- PHASE C NEW WATER LINE
- PHASE C REPLACEMENT WATER LINE
- PREVIOUS PHASES WATER LINE
- PHASE BOUNDARY

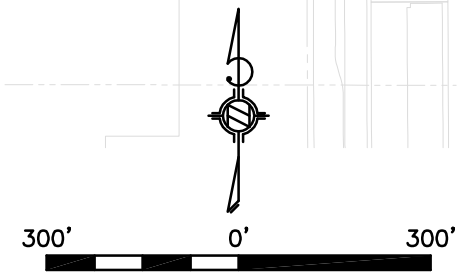
Phase C	
Pipe Ø (in)	12
Phase C New Pipe (ft)	535
Phase C Replacement Pipe (ft)	1,430
Total Pipe Phases A-C (ft)	3,850

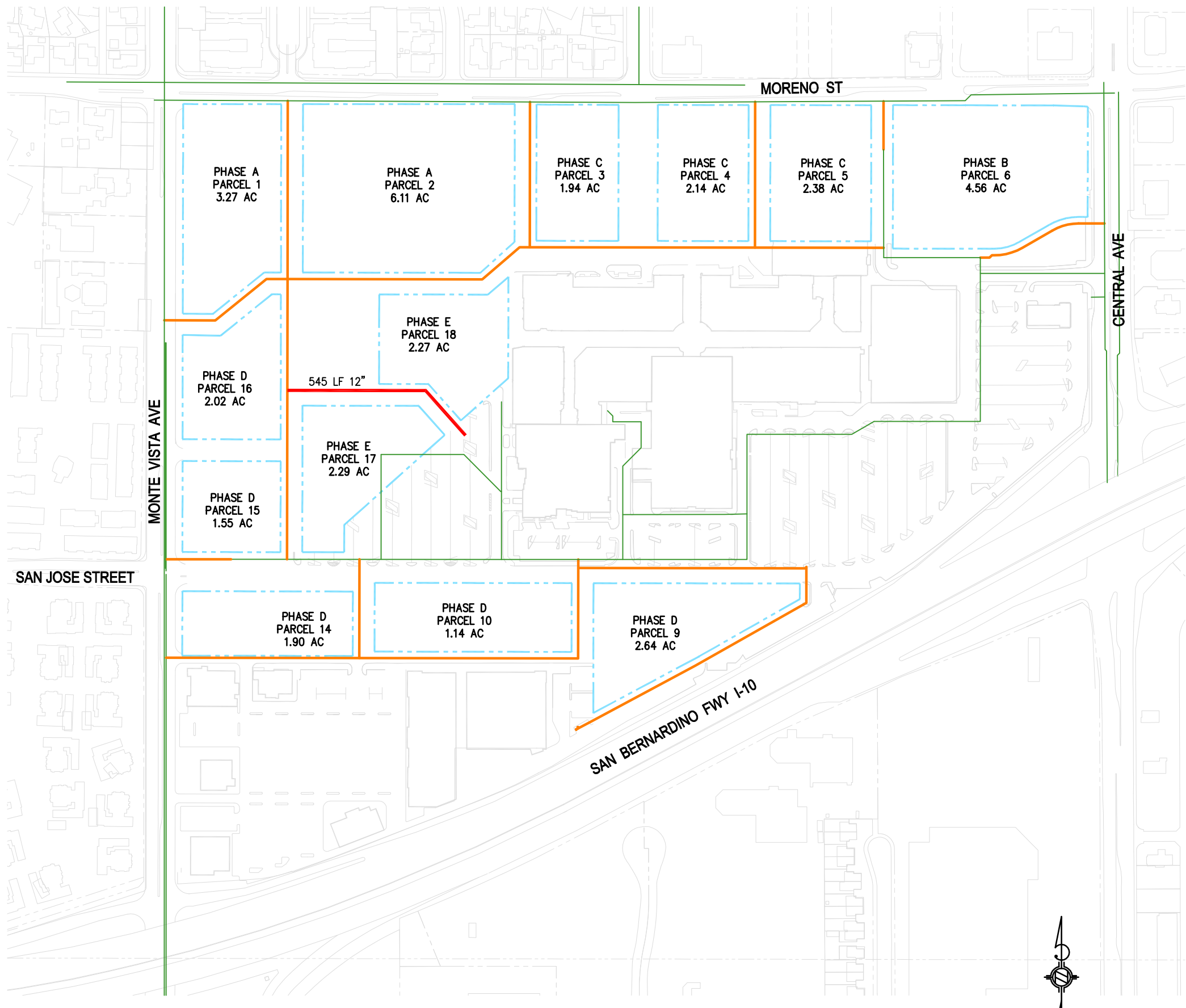


LEGEND

- EXISTING WATER LINE
- PHASE D NEW WATER LINE
- PHASE D REPLACEMENT WATER LINE
- PREVIOUS PHASES WATER LINE
- - - PHASE BOUNDARY

Phase D	
Pipe Ø (in)	12
Phase D New Pipe (ft)	1,830
Phase D Replacement Pipe (ft)	2,220
Total Pipe Phases A-D (ft)	7,900

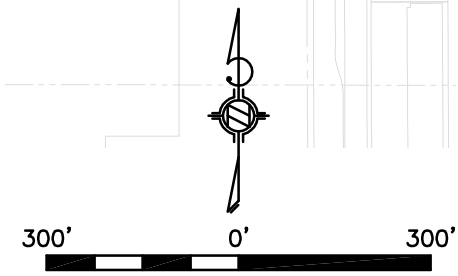


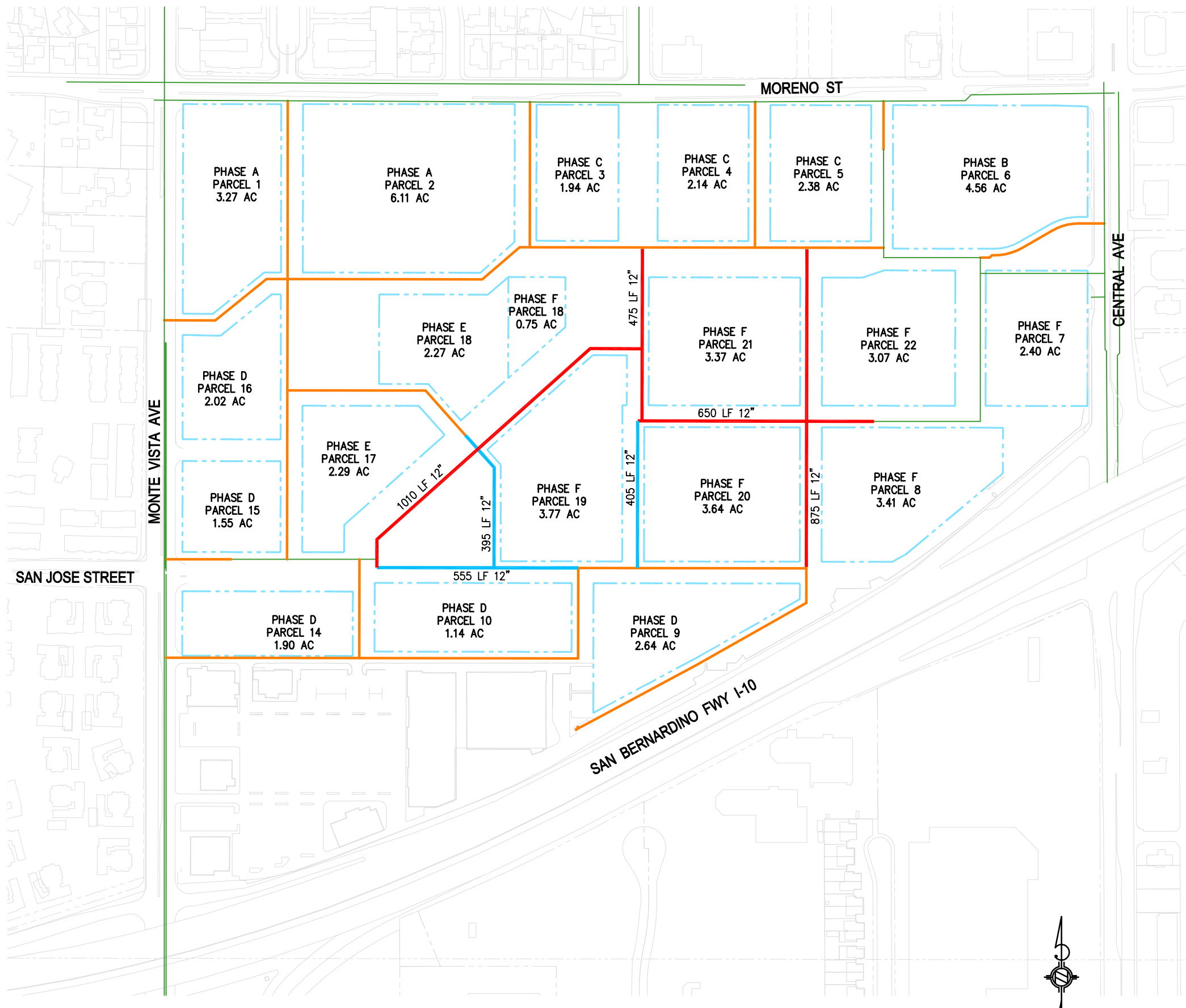


LEGEND

- EXISTING WATER LINE
- PHASE E NEW WATER LINE
- PREVIOUS PHASES WATER LINE
- PHASE BOUNDARY

Phase E	
Pipe Ø (in)	12
Phase E New Pipe (ft)	545
Phase E Replacement Pipe (ft)	
Total Pipe Phases A-E (ft)	8,445

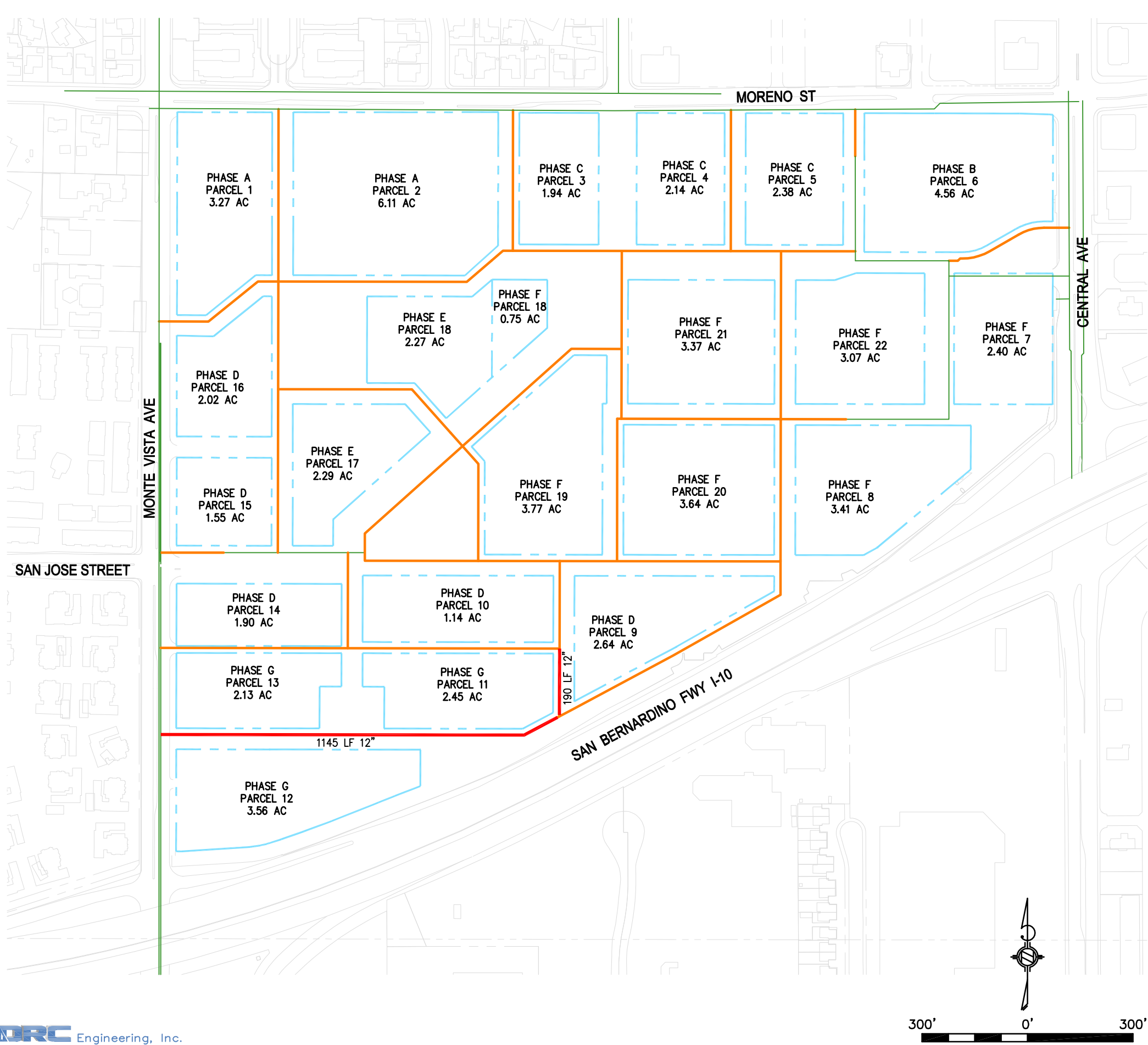




LEGEND

- EXISTING WATER LINE
- PHASE F NEW WATER LINE
- PHASE F REPLACEMENT WATER LINE
- PREVIOUS PHASES WATER LINE
- - - PHASE BOUNDARY

Phase F	
Pipe Ø (in)	12
Phase F New Pipe (ft)	3,010
Phase F Replacement Pipe (ft)	1,355
Total Pipe Phases A-F (ft)	12,810



LEGEND

- EXISTING WATER LINE
- PHASE G NEW WATER LINE
- PREVIOUS PHASES WATER LINE
- PHASE BOUNDARY

Phase G	
Pipe Ø (in)	12
Phase G New Pipe (ft)	1,335
Phase G Replacement Pipe (ft)	
Total Pipe Phases A-G (ft)	14,145

Appendix 6-1
Fire Flow Report

Fire Flow Report



**Mr. John Wiemann
Already Fire Sprinkler Co.**

5060 Montclair Plaza Ln.

Phone # (626) 332-7066

PAID

10/10/16



10575 Central Avenue
Montclair, California 91763
Phone: (909) 624-0035
Fax: (909) 624-4725

The following flow information is in accordance with hydrants as shown on the attached map(s):

Pressure Hydrant

Hydrant number: A _____ Location 5060 Montclair Plaza Ln
Static PSI: 90 Residual PSI: 85 Hydrant size/type: 2 1/2" x 4" x 6"
Distance from proposed structure: 80'
Size of water main: 12"

Flow Hydrant

Hydrant number: B _____ Location: 5060 Montclair Plaza Ln
Pitot: 65 Flow: 1201 Fire flow at 20 PSI: 4995
Duration: 2 minutes Distance from proposed structure: 100'
Hydrant size/type: 2 1/2" x 4" x 6" Size of water main: 12"

System design specifications should take into consideration zone pressure fluctuations and future District pressure alterations.

Water Purveyor: M.V.W.D. Signature: *Edward Campan*
Date: October 7, 2016 Title: Senior Utility Coordinator
Remarks _____

This information is considered valid for six (6) months

*Any and all approvals by the Fire Department will be issued by the Fire Prevention Division only.
Deficiencies in water systems shall be resolved prior to building permit(s) or recordation.*



Hydrant ID **14-56**

Street Address **5060 Montclair Plaza Ln**

The 6" fire hydrant is connected to a 12" water main and located approximately 80' from the structure.

Tested Date **10/7/2016**

Tested Time **7:30 AM**

Static Pressure PSI	90	Predicted Flow @ 20	5,000	NFPA
Residual Pressure PSI	85	Total GPM during flow test	1,202	AA Blue

Flow Hydrant **14-54**

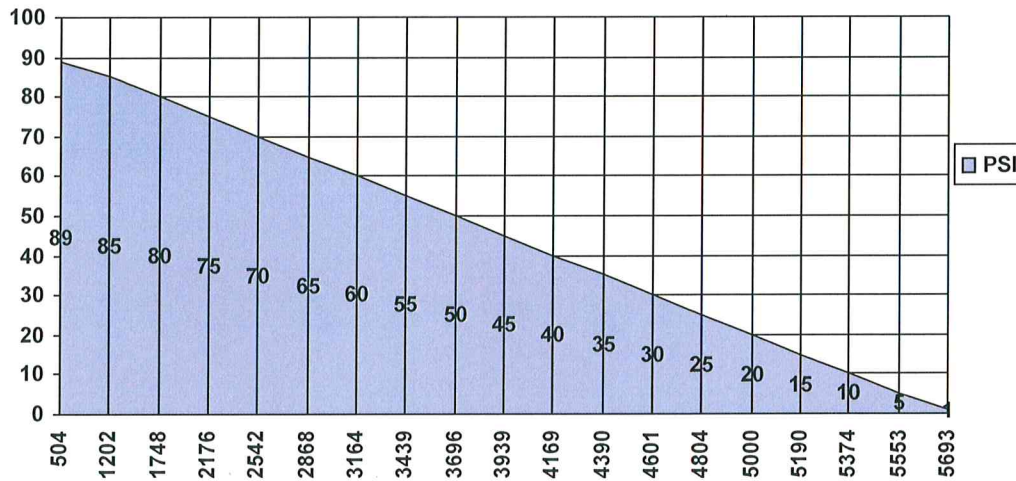
Street Address **5060 Montclair Plaza Ln**

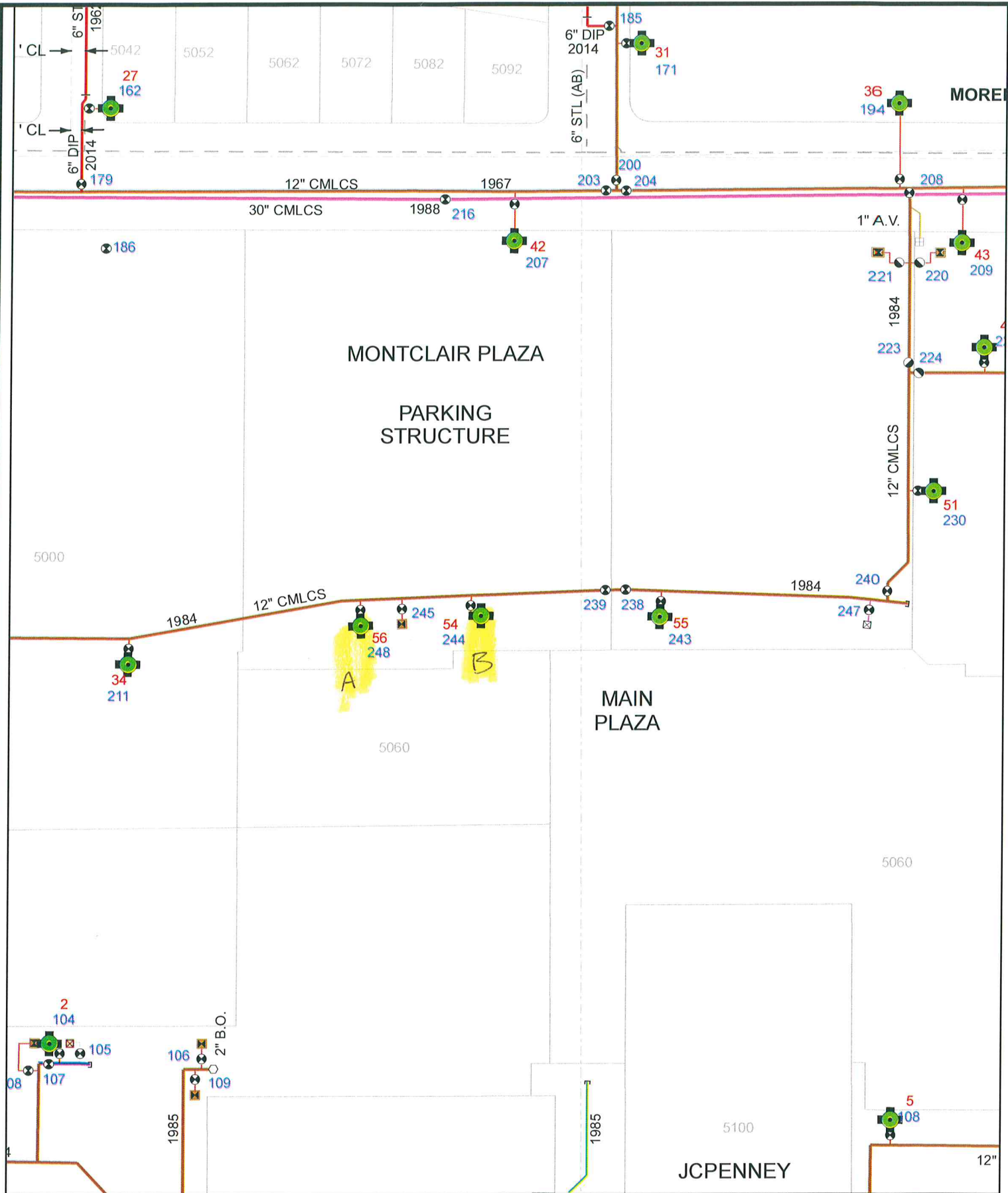
GPM **1,202**

Duration **2**

The 6" fire hydrant is connected to a 12" water main and located approximately 100' from the structure. The observed pitotmeter read was 65 PSI.

Flow





**Fire Hydrant :
PAGE 14 FH #56 #54**

6 Dry Utilities

6.1 Existing Conditions

The site currently has underground electrical facilities owned and operated by Southern California Edison (SCE) to the north and east and underground and overhead electrical facilities, also owned and operated Southern California Edison, to the west. There is existing underground primary distribution voltage (16kv or less) electric lines in Central Avenue (to the east), Moreno Street (to the north) with underground facilities on the east side of Monte Vista Avenue and overhead facilities on the west side of Monte Vista Avenue. Within the project site boundaries there are numerous electrical facilities including, but not limited to, five (5) underground vaults ranging in size from 8'x26' to 14'x57', thirteen (13) transformers in various sizes including 72"x94" and 8'x10', and a handful of smaller auxiliary structures such as 3'x5' pullboxes and 17"x30" handholes. The onsite electrical system is a looped system that appears to tie together in a circular direction from vault to vault with primary and secondary runs branching off to a number of the aforementioned transformers and tying back into the offsite systems to the north, east and west. There does not appear to be any transmission voltage lines (33kv+) onsite or on any of the surrounding offsite streets.

Natural gas facilities owned and operated by The Southern California Gas Company (SCG) are located to the north, east and west of the project site. There is an existing 8" SCG mainline running north to south in Central Avenue which currently provides natural gas service to the existing tire shop and multiple points of service to the adjacent shopping center to the east. To the north of the site on Moreno Street SCG currently operates a 2" gas mainline from Central Avenue to just west of S. Montclair Plaza Lane and a 2" gas main from Monte Vista Avenue to just east of Lindero Avenue. In Monte Vista Avenue, there is currently a 2" gas main running north and south which provides multiple services to the existing units located on the west side of the site and provides multiple services to adjacent properties on the west side of Monte Vista Avenue. There are also gas main/service branches entering the project site on Plaza Lane from the west, Lindero Avenue from the north and in E. Montclair Plaza Lane (fed from Lindero Avenue). These main/service branches feed multiple meters throughout the site with units to the south being fed from Plaza Lane and units to the north being fed from Lindero Avenue or E. Montclair Plaza Lane.

Copper and fiber telephone facilities owned and operated by Frontier Communication (formerly Verizon) are adjacent to the site on the north and west sides. Based on the information provided by Frontier on their facility inventory maps it does not appear there are existing telephone facilities located in Central Avenue adjacent to our site at this time. There are existing fiber and copper facilities located within the project site boundary with services feeding multiple units. The main feed for the onsite telephone system appears to be coming from the north off of Moreno Street. There are at least two (2) existing telephone manholes located within the site, these would be the main points of the telephone underground system.

There is currently CATV facilities owned and operated Spectrum (formerly Time Warner Cable) immediately to the north and west of the site. Based on the information provided by Spectrum on their facility inventory maps it does not appear there are existing CATV facilities located in Central Avenue adjacent to our site at this time. There are existing CATV facilities located within the project site boundary with services feeding multiple units. The main feed for the onsite telephone system appears to be coming from the north off of Moreno Street. There are a number of existing CATV "pedestals" located within the site, these would be the main points of the CATV underground system.

6.2 Proposed Development (Phases A - D)

Based on the information we currently have, it appears that there is sufficient electrical “source” to complete Phases A-D of the proposed development without the need for any “major” electrical system upgrade. However, dependent on the final layout of the Phase 1 portion of the proposed development there will be a need for multiple relocation work orders with Southern California Edison to “reconfigure” the existing underground electrical facilities to match with the proposed development layout. The relocation work orders may also require some “updating” to the existing electrical systems to bring the system up to current standards and to account for the potential increase in load demand. Without having the actual load demands for the proposed Phases A-D work it would be hard to determine at this point how much upgrading of the existing system would need to be completed. There will also be a need to complete multiple new meter and service work orders with Southern California Edison to run new primary and secondary conduits and cable to each of the proposed commercial/dwelling units.

It is our opinion that there is sufficient natural gas surrounding the project site to accommodate the proposed Phases A-D of the site development with minimal, if any, upgrades needing to be completed. There is existing gas mainlines surrounding the site on three (3) sides with one of those mainlines being an 8” PE pipe and the other two at 2” each. The existing onsite natural gas main/service branches will need to be reconfigured to account for the proposed development layout but this is typical with any proposed development. Southern California Gas Company will also more than likely require that the Development loop the natural gas system so should at this point assume we will be tying the new gas system into all three of the surrounding streets. There will be a need for multiple “main” work orders and multiple “service” work orders with The Southern California Gas Company.

Similar to Southern California Edison, it is our opinion that Frontier Communications has enough existing source onsite currently to service Phases A-D of the proposed development and only minor upgrades would need to be completed. The current Frontier Communications system will also need to be relocated in some areas based on the ultimate layout of Phases A-D of the proposed development with multiple relocation and new service work orders.

Similar to Frontier Communications, it is our opinion that Spectrum has enough existing source onsite currently to service Phases A-D of the proposed development and only minor upgrades would need to be completed. The current Spectrum system will also need to be relocated in some areas based on the ultimate layout of Phases A-D of the proposed development with multiple relocation and new service work orders.

6.3 Proposed Development (Phases E-G)

The site currently has enough source to accommodate Phases A-D of the proposed development, but as we move through to the final build-out there may be some concerns about how this development will strain the current Edison system. Due to the fact that there is a number of unknowns at this time, most importantly no knowing the actual load demand that will accompany the final build out of the development, it is hard to say how much additional work will need to be completed in order to accommodate the future buildings. Similar to Phases A-D, it is our opinion that there will be, at a minimum, a requirement to relocate and upgrade many of the existing electrical facilities and there will be a number of new service work orders required as well. In a “worst case scenario” Southern California Edison may require that the developer balance the overall load of the proposed development on different Edison circuits. This could mean some additional offsite work would need to be completed including the possible need for a new, or extended, offsite backbone system on the three surrounding streets to bring additional electrical circuits to the site. Overall, it is our opinion that Edison will be able to accommodate whatever load is

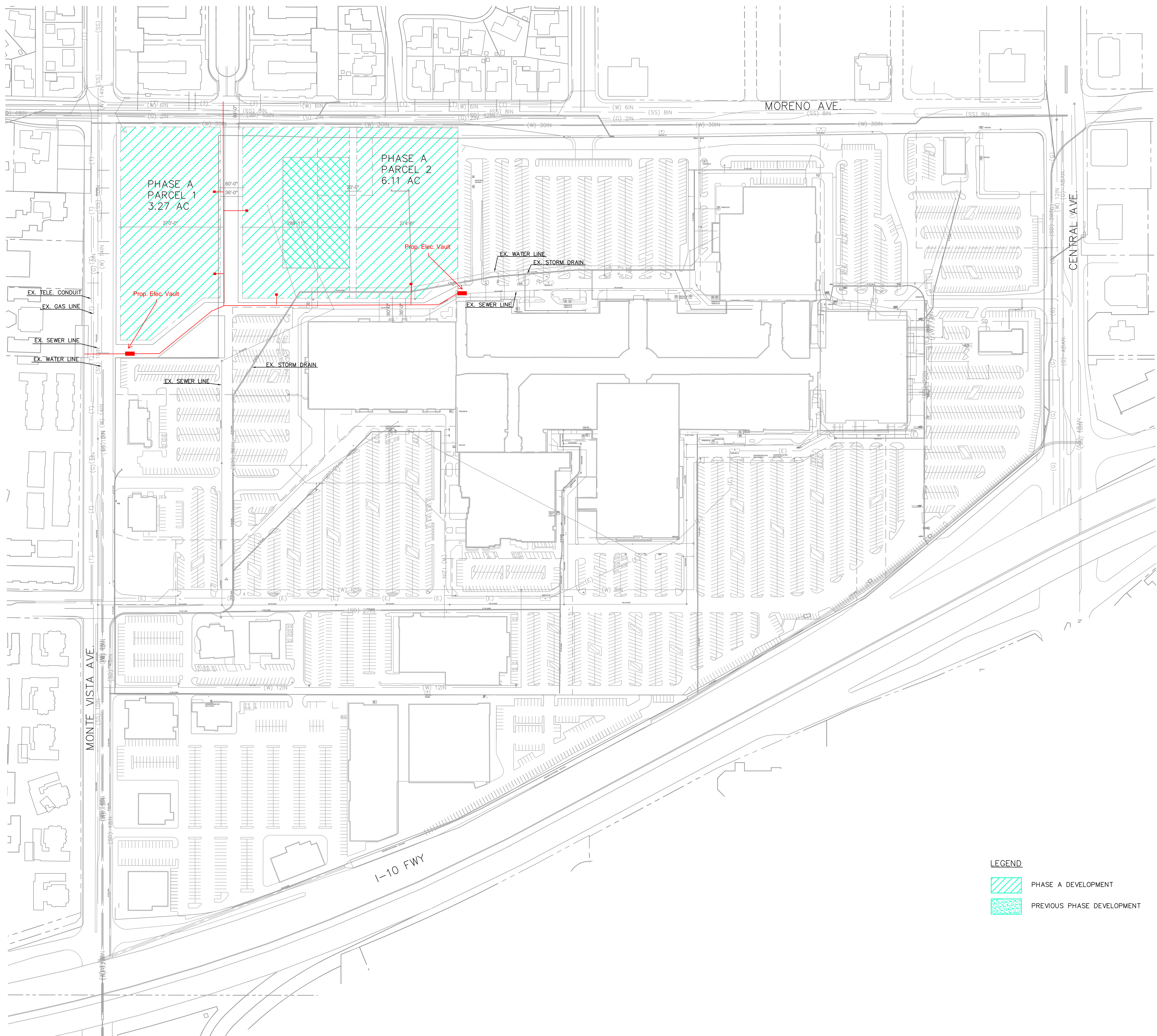
required but the costs to redevelop the system may be on the high side depending on how much redevelopment, upgrading and relocating needs to be completed in order to accommodate the required demand. As more information on the final build out becomes available a better determination of required work, and costs associated with that work, can be determined. It would be our recommendation to have a meeting with Southern California Edison in the future, when more information is available, to discuss the proposed development and receive their opinion on probable work and costs as well.

It is our opinion that there is sufficient natural gas surrounding the project site to accommodate the proposed final build out of Phases E-G of the site development with minimal, if any, upgrades needing to be completed. There is existing gas mainlines surrounding the site on three (3) sides with one of those mainlines being an 8" PE pipe and the other two at 2" each. The existing onsite natural gas main/service branches will need to be reconfigured to account for the proposed development layout but this is typical with any proposed development. Southern California Gas Company will also more than likely require that the Development loop the natural gas system so should at this point assume we will be tying the new gas system into all three of the surrounding streets. There will be a need for multiple "main" work orders and multiple "service" work orders with The Southern California Gas Company.


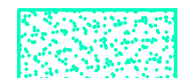
Similar to Southern California Edison, it is our opinion that Frontier Communications has enough existing source onsite currently to service Phases A-D of the proposed development but as we move through to Phases E-G there may be some concerns about how this development will strain the current Frontier Communications system. It is our opinion that there will be, at a minimum, a requirement to relocate and upgrade many of the existing telephone facilities and there will be a number of new service work orders required as well. Some additional offsite work would need to be completed including the possible need for a new, or extended, offsite backbone system on the three surrounding streets to bring additional telephone facilities to the site. It would be our recommendation to have a meeting with Frontier Communications in the future, when more information is available, to discuss the proposed development and receive their opinion on probable work and costs as well.

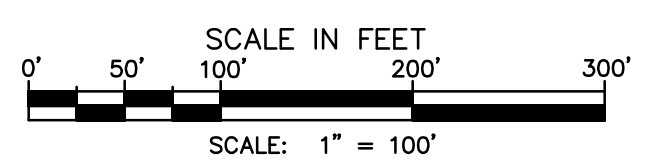
Similar to Frontier Communications, it is our opinion that Spectrum has enough existing CATV facilities onsite currently to service Phases A-D of the proposed development but as we move through to Phases E-G there may be some concerns about how this development will strain the Spectrum system. It is our opinion that there will be, at a minimum, a requirement to relocate and upgrade many of the existing CATV facilities and there will be a number of new service work orders required as well. Some additional offsite work would need to be completed including the possible need for a new, or extended, offsite backbone system on the three surrounding streets to bring additional CATV facilities to the site. It would be our recommendation to have a meeting with Spectrum in the future, when more information is available, to discuss the proposed development and receive their opinion on probable work and costs as well.

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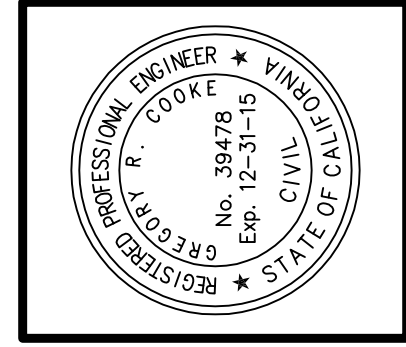
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-  PREVIOUS PHASE DEVELOPMENT



**DRY UTILITY PHASING PLAN
MONTCLAIR PLAZA
MONTCLAIR, CA
PHASE A**

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DRAWING NAME:
DATE:
ISSUE: EXHIBIT

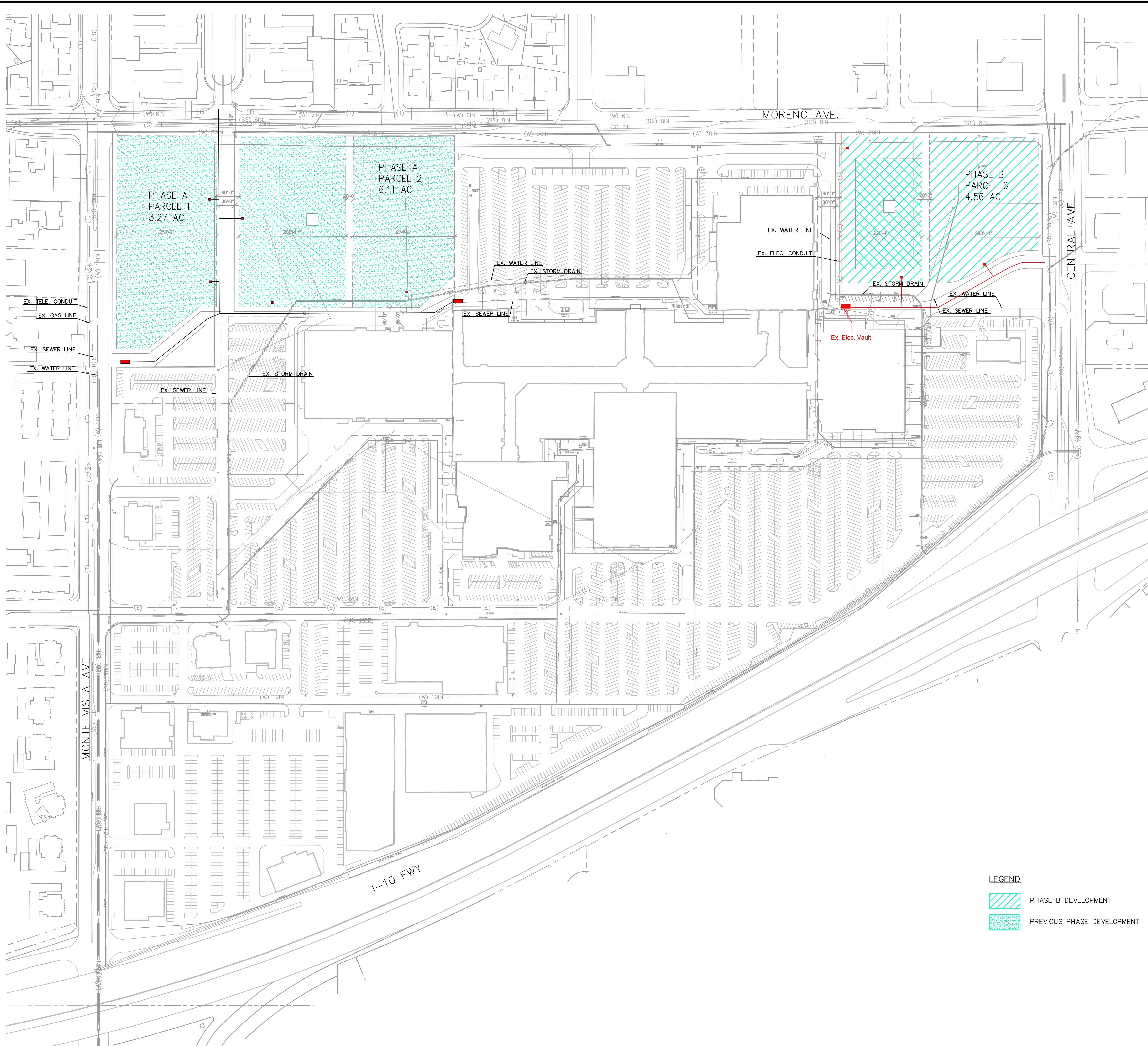
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OF 7 SHEETS
SCALE: 1"=100'



PREPARED BY: **dorc** Engineering, Inc.
Civil Engineering/Land Surveying/Land Planning 714-665-8660
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Suite 210
Anheim Hills, CA 92808
GREGORY R. COOME
P.E. 39478
DATE

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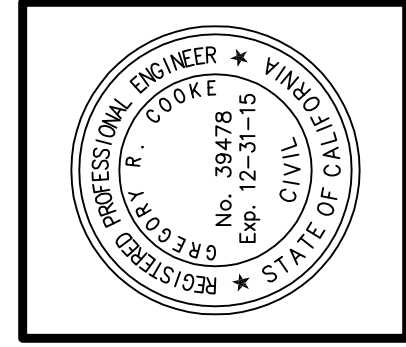


LEGEND

- PHASE B DEVELOPMENT
- PREVIOUS PHASE DEVELOPMENT

PREPARED BY:

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 DATE



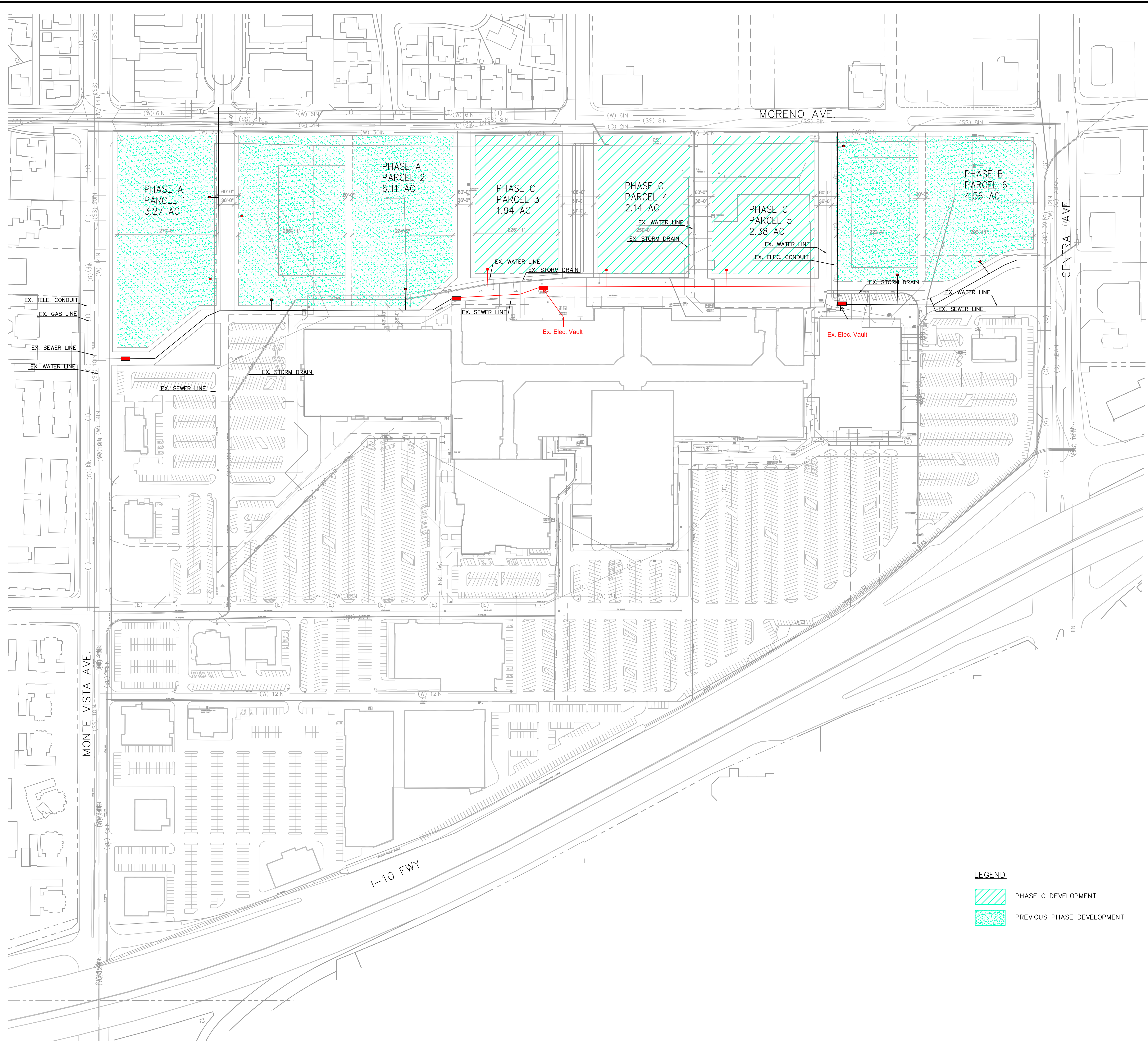
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MONTCLAIR PLAZA
MONTCLAIR, CA
PHASE B
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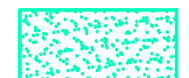
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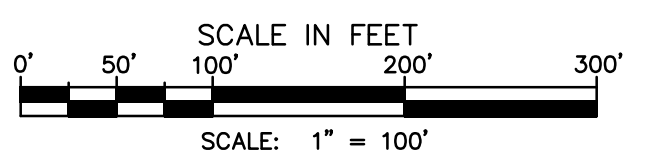
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-  PREVIOUS PHASE DEVELOPMENT

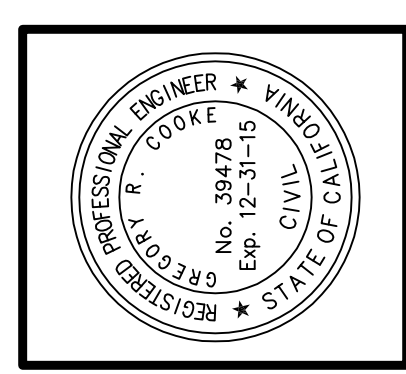


**DRY UTILITY PHASING PLAN
MONTCLAIR PLAZA
MONTCLAIR, CA
PHASE C**

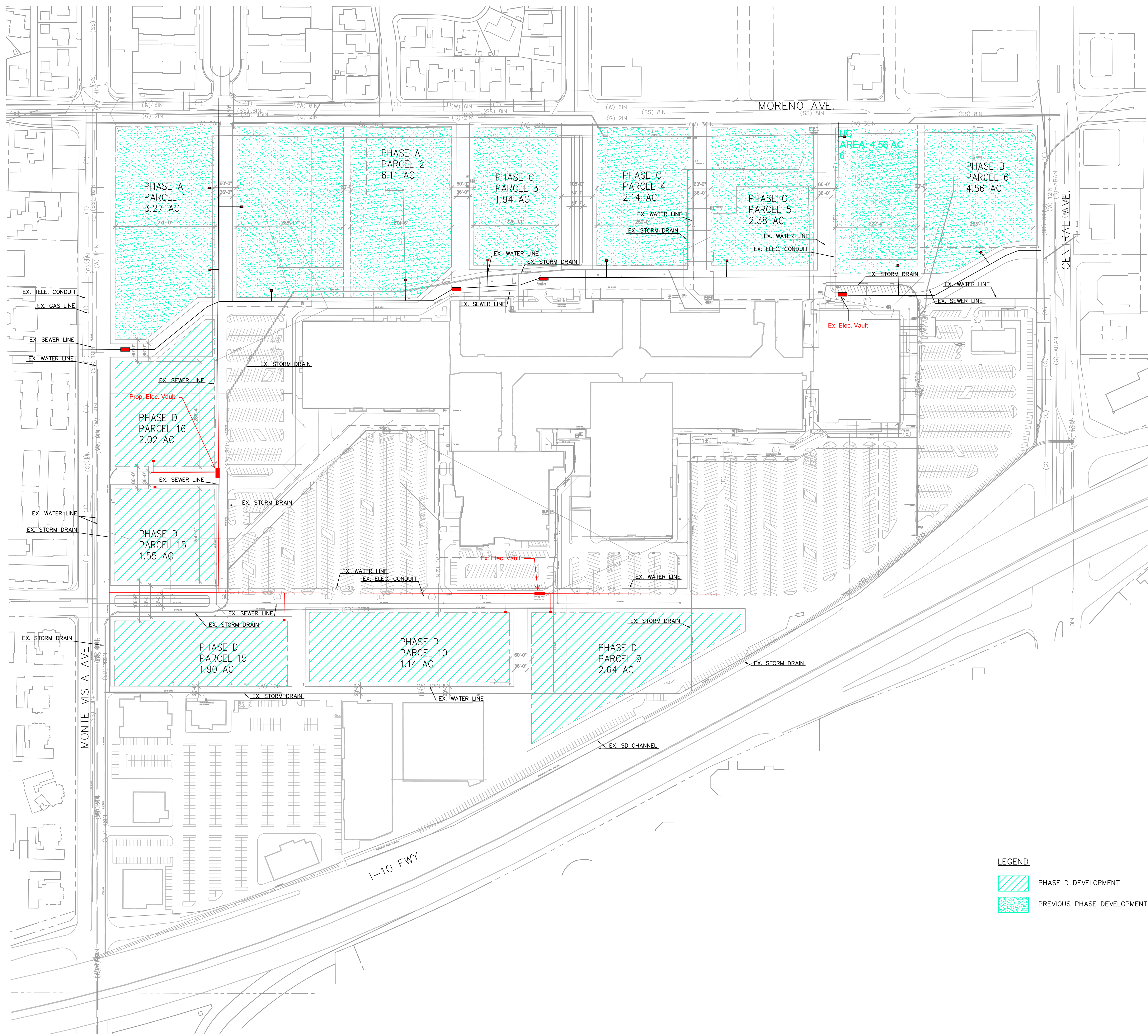
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ISSUE: EXHIBIT
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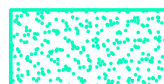
PREPARED BY: **dorc**
 160 S. Old Springs Road
 Suite 210
 Anaheim Hills, CA 92808
 Civil Engineering/Land Surveying/Land Planning 714-665-8660
 GREGORY R. COOME
 R.C.E. 39478
 DATE:
NOT FOR CONSTRUCTION

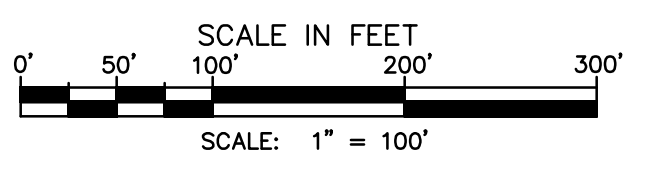


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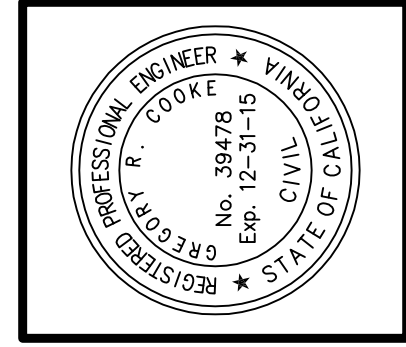


LEGEND

-  PHASE D DEVELOPMENT
-  PREVIOUS PHASE DEVELOPMENT



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 GREGORY R. COOME
 REG. 39478
 DATE



PROJECT:	DATE:
ISSUE:	REVISION:

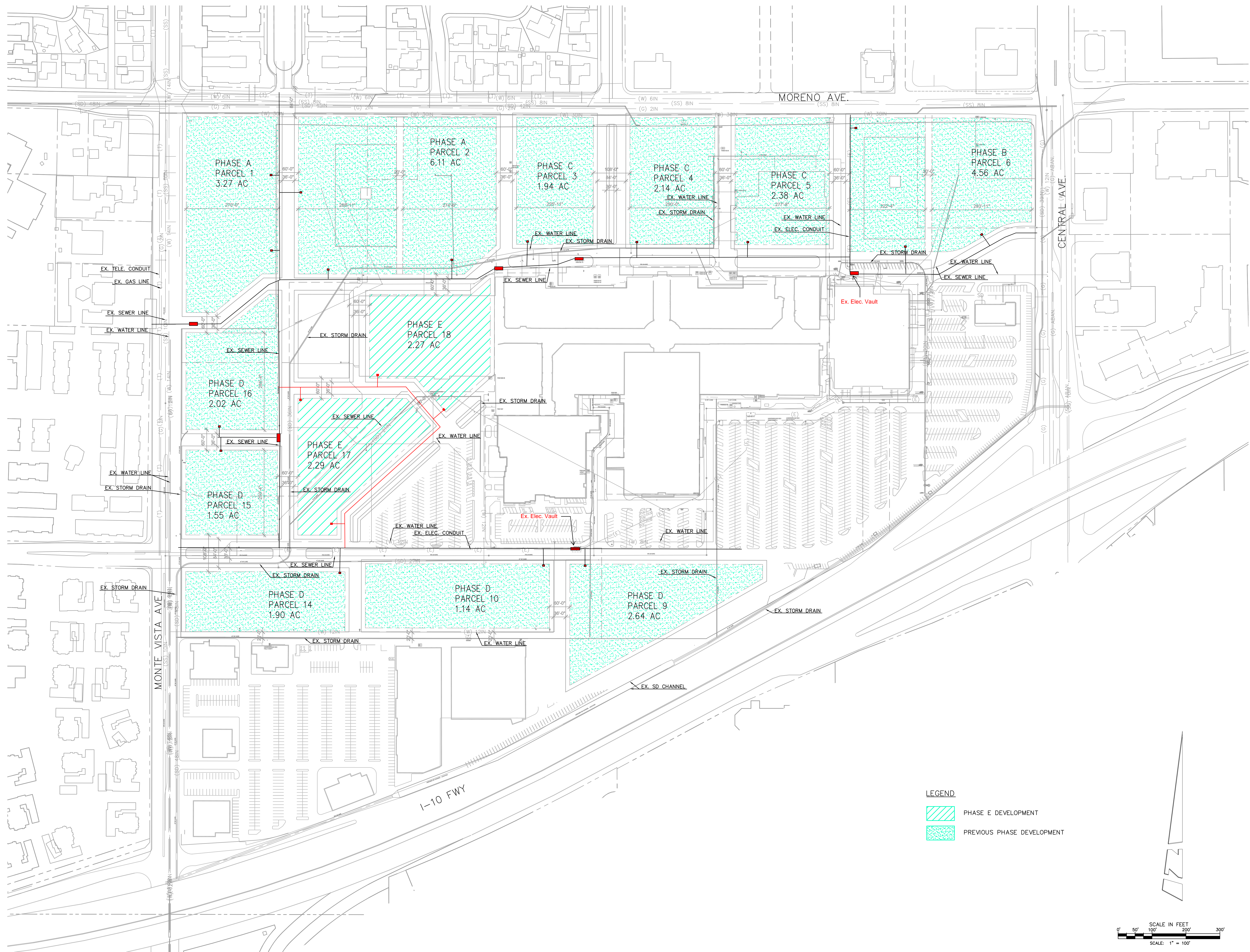
DRY UTILITY PHASING PLAN
MONTCLAIR PLAZA
MONTCLAIR, CA
PHASE D

DRAWING NAME:
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4
 OF 7 SHEETS
 SCALE: **1"=100'**

ISSUE: EXHIBIT
 DATE: 2020-01-09
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 PROJECT NO: **19-408**
 SHEET NUMBER:
4
 OF 7 SHEETS
 SCALE: **1"=100'**

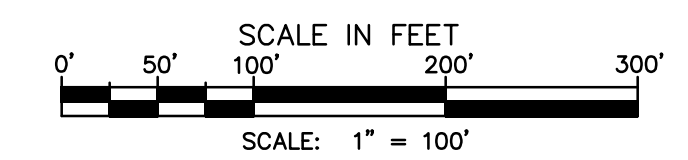
NOT FOR CONSTRUCTION

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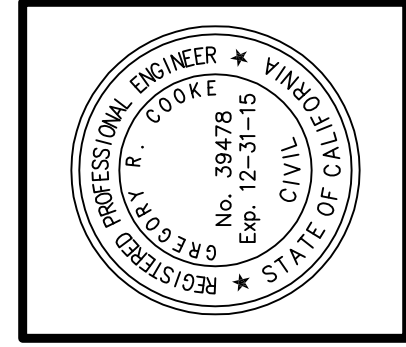
LEGEND

- PHASE E DEVELOPMENT
- PREVIOUS PHASE DEVELOPMENT



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 DORC Engineering, Inc.
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 GREGORY R. COOME
 P.C.E. 39478
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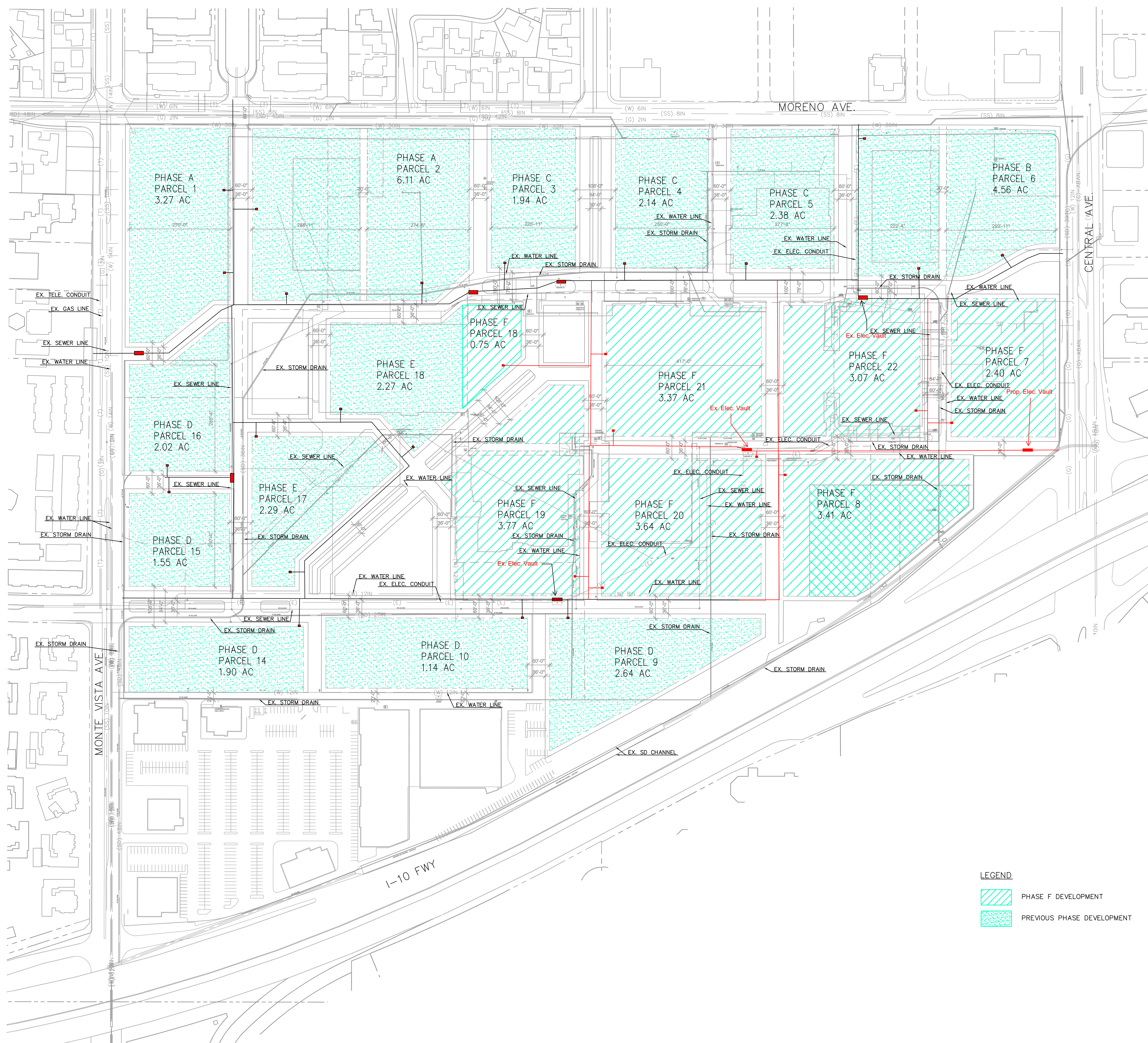
NO.	REVISION	DATE

PROJECT: **DRY UTILITY PHASING PLAN**
MONTCLAIR PLAZA
MONTCLAIR, CA
PHASE E
 DRAWING NAME:
 PROJECT NO.: **19-406**
 SHEET NUMBER:
5
 OF 7 SHEETS
 SCALE: **1"=100'**

ISSUE: EXHIBIT
 DATE: 2020-01-09
 CHECKED: DRC DRAWN: DRC
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 OF 7 SHEETS
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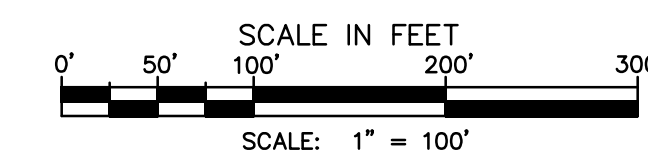
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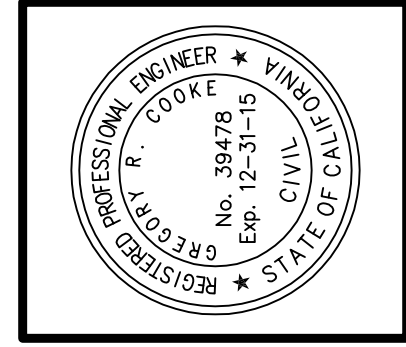
LEGEND

- PHASE F DEVELOPMENT
- PREVIOUS PHASE DEVELOPMENT



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 DATE



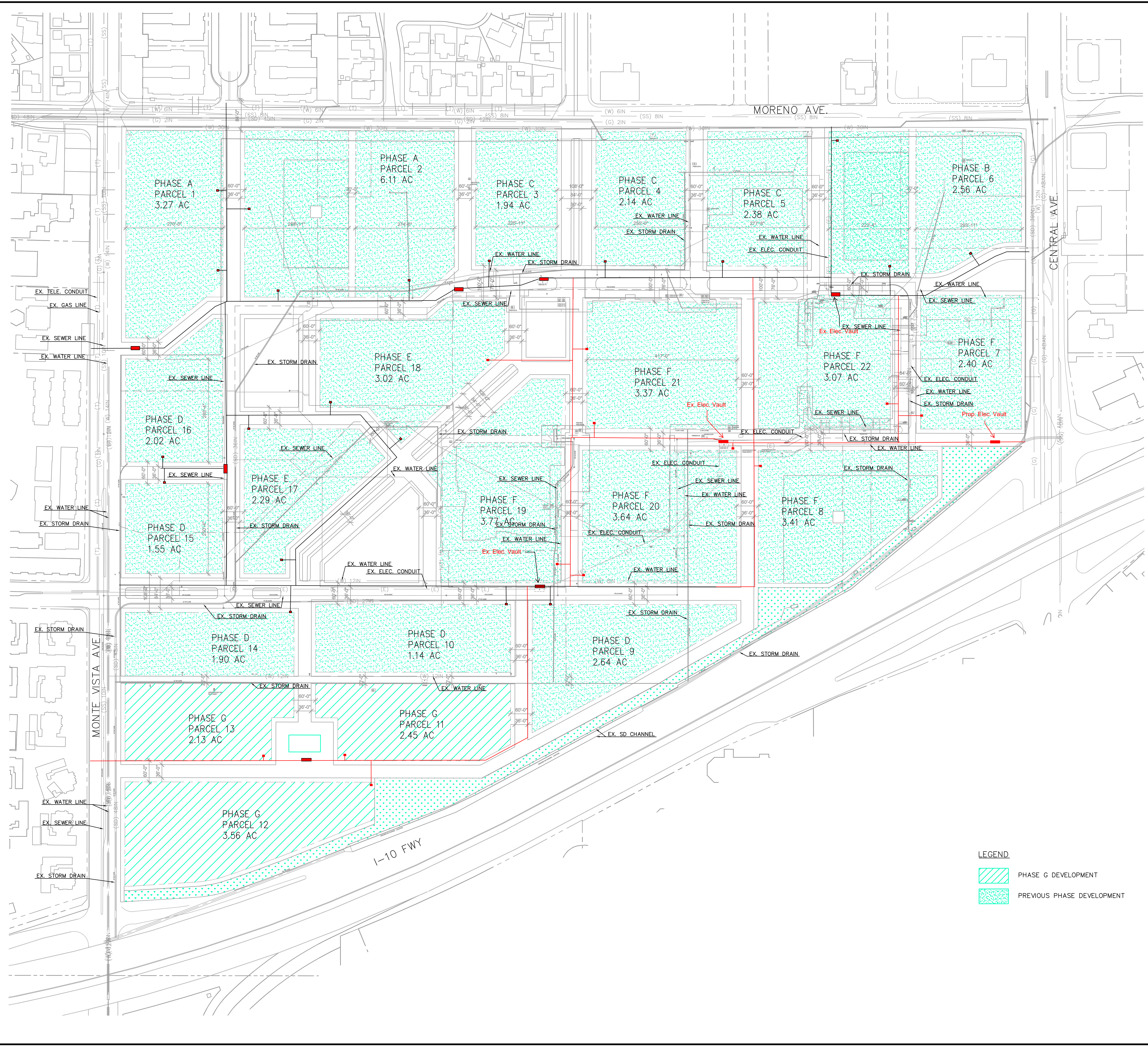
NO.	REVISION	DATE

PROJECT: **DRY UTILITY PHASING PLAN**
MONTCLAIR PLAZA
MONTCLAIR, CA
PHASE F
 DRAWING NAME:
 DATE:

ISSUE: EXHIBIT
 DATE: 2020-01-09
 CHECKED: DRC DRAWN: DRC
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 SHEET NUMBER:
6
 OF 7 SHEETS
 SCALE: **1"=40'**

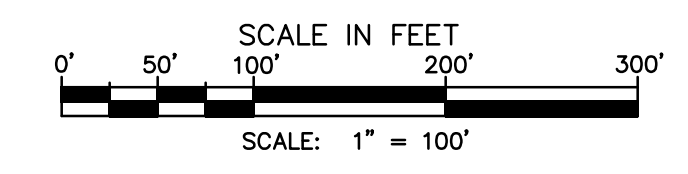
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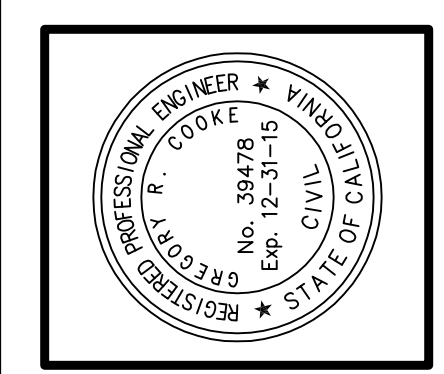


LEGEND

- PHASE G DEVELOPMENT
- PREVIOUS PHASE DEVELOPMENT



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PROJECT:	
ISSUE:	
DATE:	
CHECKED:	
DRAWING FILE:	
PROJECT NO.:	19-406
SHEET NUMBER:	7
OF	7 SHEETS
SCALE:	1"=40'

DRY UTILITY PHASING PLAN
MONTCLAIR PLAZA
MONTCLAIR, CA
PHASE G

ISSUE: EXHIBIT
 DATE: 2020-01-09
 CHECKED: DRC DRAWN: DRC
 DRAWING FILE:
 PROJECT NO.: 19-406
 SHEET NUMBER:
 7
 OF 7 SHEETS
 SCALE: 1"=40'

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