Mission Grove Apartments Project

Draft Environmental Impact Report
SCH#2022100610

Appendix J: Sewer Capacity Study

DRAFT PROJECT MEMORANDUM

MISSION GROVE APARTMENTS SEWER STUDY

Date: 11/23/2022
Project No.: 201644

City of Riverside

Prepared By:	Michael Wetterau
Reviewed By:	Graham Juby
Subject:	Mission Grove Apartments – City of Riverside: Sewer Study

Background

Anton Mission Grove, LLC (Applicant) plans to redevelop an area with mixed use-urban land use in the City of Riverside (City), California. The planned project, Mission Grove Apartments (Development), is located Northwest of Mission Grove Parkway and Mission Village Drive intersection. A copy of the Development's site plan is included as Attachment A. The purpose of this study is to understand the impact that the Development could have on the City's wastewater collection system. A hydraulic evaluation was completed by updating the hydraulic model developed as part of the City's 2020 *Update of the Integrated Master Plan for the Wastewater Collection and Treatment Facilities* (Master Plan Update). This memorandum describes the model update, evaluation criteria, and hydraulic evaluation.

Model Update

The hydraulic model developed by Carollo Engineers, Inc. (Carollo) included pipelines that are 10 inches in diameter and larger. Some smaller-diameter sewers (8 inches in diameter and smaller) are also included in the hydraulic model, where needed, for connectivity. The major model updates for the purpose of this analysis included updating wastewater flows, extending the hydraulic model, and the point of connection in the hydraulic model.

The Development consists of approximately 9.9 acres of mixed use-urban land use. The proposed development land use differs from the 2019 General Plan of commercial. The new average dry weather flow (ADWF) from the Development was developed by Carollo using the same method as in the Master Plan Update and is summarized in Table 1. For the hydraulic evaluation, the net additional loads associated with the project were allocated to the modeled manhole as ADWF. It was assumed that there was a change in the rain derived inflow and infiltration (RDII) during a wet weather flow (WWF) event due to the development during the existing conditions.

During the hydraulic model build, the ADWF and RDII was connected to Manhole (MH) 9O179, which is where the Developers site plan shows the development connecting to, as shown on Figure 1. The 8-inch sewers downstream of MH 90179 were not included in the City's model, but eventually discharge to MH 9O177, which is part of the City's model. The hydraulic model was updated to include the 8-inch pipe segments between MH 9O179 and MH 9O177, shown in purple on Figure 1. The existing model loads were reallocated along the added in pipelines. The sewer between the proposed Development and MH 90179 is noted as an 8-inch line but was not included in the City's GIS.

Table 1 Dry Weather Flow – Summary

	Acre (ac)	Flow Factor[(1)] (gpd/ac)	ADWF (gpd)
Master Plan Update	9.9	710	7,029
Proposed Development	9.9	3,200	31,680
Net Additional Flows	--	--	24,651

Notes:
Abbreviations: ac – acre; gpd – gallons per day; gpd/ac – gallons per day per acre.
(1) Source: Update of the Integrated Master Plan for Wastewater Collection and Treatment Facilities.

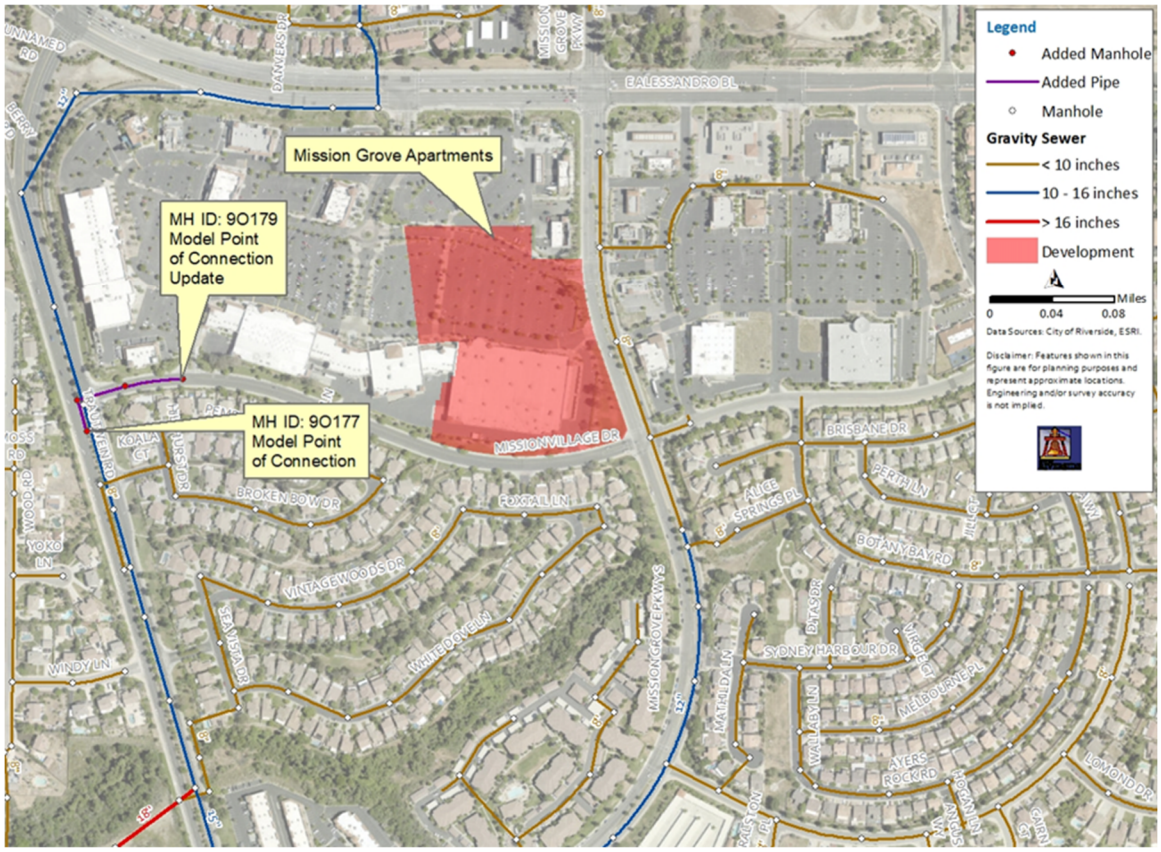

Figure 1 Vicinity Map

Evaluation Criteria

The evaluation criteria used in this this study are consistent with the evaluation criteria used in Volume 3, Chapter 5: Planning Criteria and Design Flows (Chapter 5) of the Master Plan Update. This section provides a brief description of the evaluation criteria used in this study.

The primary criterion used to identify capacity-deficient sewers or to size new sewer improvements is the maximum d/D. The d/D value is defined as the depth of flow (d) in a pipe during peak (design) flow conditions divided by the pipe's diameter (D). The maximum depth criteria were evaluated under peak wet weather flow (PWWF) conditions. The PWWF design storm is a 10-year 24-hour storm event. The maximum depth criteria are summarized in Table 2. The following explains these criteria in more detail:

- **Flow Depth for Existing Sewers.** Maximum flow depth criteria for existing sanitary sewers are established based on several factors, including the acceptable risk tolerance of the utility, local standards and codes, and other factors. Using a conservative d/D ratio when evaluating existing sewers may lead to unnecessary replacement of existing pipelines. Conversely, lenient flow depth criteria could increase the risk of sanitary sewer overflows (SSOs). Ultimately, the maximum allowable flow depth criteria should be established to be as cost-effective as possible while at the same time reducing the risk of SSOs to the greatest extent possible. For the City, existing pipelines were flagged if the d/D exceeded 0.90.
  A capacity-deficient sewer (i.e., system bottleneck) raises the hydraulic grade line of upstream sewers, leading to backwater conditions. The greater the capacity deficiency, the higher water levels will surcharge upstream of the bottleneck pipeline (or pipelines). The hydraulic model is used to determine "backwater" pipelines to specify which specific pipelines are the actual root causes of the capacity deficiency. Capital projects are proposed to provide greater flow capacity for the deficient sewers, which eliminates the backwater conditions that cause surcharging.
- **Flow Depth for New Sewers.** When sizing new sewer pipelines, it is common practice to adopt different flow depth criteria for various pipe sizes. Design d/D ratios typically range from 0.5 to 0.92, with the lower values typically used for smaller pipes, which may experience flow peaks greater than design flow or blockages from debris, paper, or rags. The recommended d/D criteria for sizing new trunk lines are also summarized in Table 2. For pipelines 10 inches and smaller in diameter, the maximum d/D value is 0.5 or 50 percent of the pipeline depth. For pipelines that are 12 inches to 18 inches in diameter, the recommended maximum d/D is 0.67. For pipelines larger than 18 inches in diameter, the maximum d/D is 0.75.

Table 2 Maximum Flow Depth Criteria

Pipe Diameter (inches)	Maximum d/D Ratio (during PWWFs)
Maximum d/D for Existing Sewer	
All Pipes	0.90
Maximum d/D for New Sewers	
10 Inches and Smaller	0.50
12 Inches to 18 Inches	0.67
Larger Than 18 Inches	0.75

Hydraulic Evaluation

A capacity analysis entails identifying areas in the sewer system where flow restrictions occur or where pipe capacity is insufficient to convey PWWFs. Sewers that lack sufficient capacity to convey PWWFs create bottlenecks in the collection system that can potentially cause SSOs. This section discusses the impacts of the development and confirms if the recommended improvement project sizing developed in the Master Plan Update are still adequately sized.

Existing Hydraulic Evaluation

For the existing sewer collection system, the PWWF was routed through the hydraulic model along with the changes to the point of connections for ADWF and RDII. The purpose of the existing system evaluation is to verify that the existing system is appropriately sized to convey existing PWWFs plus the additional flows from the proposed land use change. The Master Plan Update did not identify improvements downstream of

the Development under existing conditions. The hydraulic analysis showed that the proposed Master Plan Update's existing system is adequately sized for the proposed change in land use type.

Future Hydraulic Evaluation

The analysis of the future system was performed in a manner like the existing system analysis. The purpose of the future system evaluation is to verify that the future system improvements were appropriately sized to convey future PWWFs and to identify the locations of existing sewers that are adequately sized to convey existing PWWFs but cannot convey future PWWFs. The Master Plan Update identified one future system improvement downstream of the Development which is listed below.

- **New Parallel Trunk to Santa Ana Trunk Sewer (Project GM-34).**

This project is identified on Figure 2. The timing of growth under future conditions is expected to occur within the planning horizon of this Master Plan Update, which is the year 2037. As flows continue to increase in the future, there will be some areas of the collection system that cannot convey the future PWWF without flows exceeding capacity. The future capacity evaluation, including the proposed Development, did not identify new system deficiencies not already identified in the Master Plan Update or the existing hydraulic evaluation discussed above. The hydraulic analysis showed that the proposed Master Plan Update's future project is adequately sized for the proposed redevelopment.

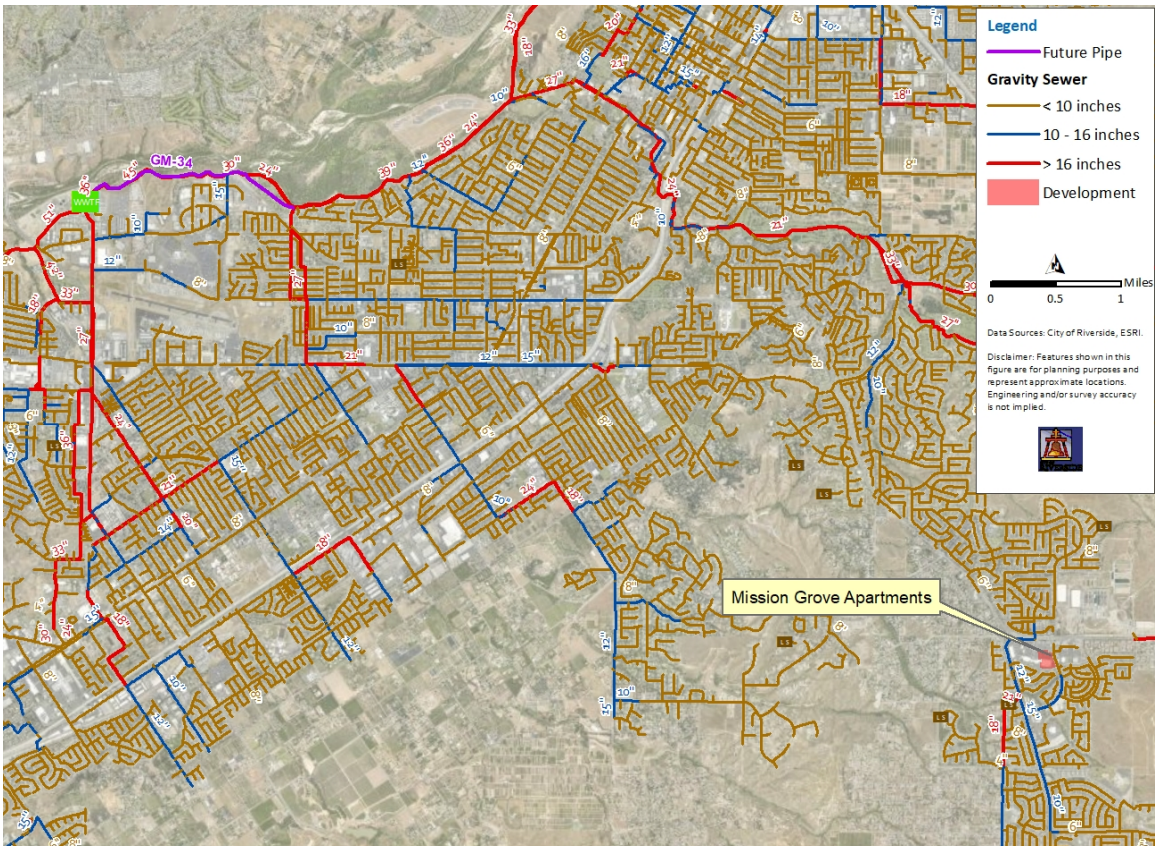

Figure 2 Future System Improvements Identified in the Master Plan Update

Lift Station Capacity Analysis

The Wood Road Lift Station is downstream of the proposed Development. In accordance with the established planning criteria, the downstream lift station was evaluated to determine if it has sufficient capacity to convey the maximum projected inflow from the 10-year 24-hour design storm under existing and future conditions. A lift station with an influent peak inflow above firm pumping capacity (pumping capacity with the largest pump out of service) is flagged as deficient. Table 3 summarizes the modeled lift station capacity analysis. It was determined that the Wood Road Lift Station has sufficient capacity to meet existing peak inflow and future peak inflow with the proposed Development.

Table 3 Lift Station Capacity Analysis

Lift Station	Existing Firm Capacity[(1)(2)] (mgd)	Existing Peak Inflow[(3)] (mgd)	Future Peak Inflow[(4)] (mgd)	Existing Balance (mgd)	Future Balance (mgd)
Wood Road	6.91	5.64	6.43	1.27	0.48

Notes:
(1) Source: City of Riverside Sewer Plans - https://wam.riversideca.gov/PWSurvey/sewer.asp & Regional Water Quality Control Plant Wastewater Lift Station Assessment January 2009.
(2) Firm capacity is defined as the lift station capacity with the largest pump not operational.
(3) Existing Peak Inflow is based on the hydraulic model's maximum flow into the wet well during the 10-yr 24-hr design storm under existing conditions.
(4) Future Peak Inflow is based on the hydraulic models' maximum flow into the wet well during the 10-yr 24-hr design storm under build out conditions.

Conclusion

The evaluations showed that the Master Plan Update's proposed improvement project is adequate to meet the requirements of the proposed Development for areas included in the City's hydraulic model. As a result, no changes to the Master Plan Update are recommended to mitigate this proposed land use change.

Attachment: Attachment A

cc: Mr. Chris Scully, City of Riverside

Attachment A

MISSION GROVE APARTMENTS CITY OF RIVERSIDE SEWER STUDY

AGENCY SUBMITTAL
RIVERSIDE, CA
AUGUST 8, 2022

SHEET INDEX

Project Team

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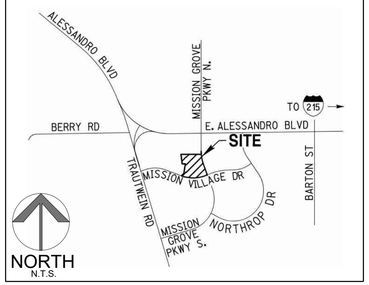
VICINITY MAP



REVISION LOG

NO.	DESCRIPTION	Date
1	1ST SUBMTTAL	06.06.22
2	2ND SUBMTTAL	08.08.22
2		
3		
4		
5		

ANTON DEV CO

MISSION GROVE APARTMENTS

Riverside, CA
Anton Mission Grove, LLC

MJS LANDSCAPE ARCHITECTURE
RICK ENGINEERING COMPANY
JSA JS & ASSOCIATES

COVER SHEET

Architecture. Design. Relationships.

G1.0

Job No. 2021-505
Date 8-8-2022

PROJECT DESCRIPTION

A 347 UNIT APARTMENT PROJECT CONSISTING OF 4-STORY TYPE V-A WITH TUCK-UNDER PARKING

GROSS LAND AREA:	9.92 AC
TOTAL UNITS:	347 DU
DENSITY:	35 DU/AC
F.A.R.	0.97
LOT COVERAGE	0.36
ARCHITECTURAL STYLE:	CONTEMPORARY SPANISH
ASSESSOR'S PARCEL NUMBER	276-110-018
EXISTING GENERAL PLAN LAND USE DESIGNATION	COMMERCIAL
PROPOSED GENERAL PLAN LAND USE DESIGNATION	MIXED USE-URBAN
EXISTING ZONING	COMMERCIAL RETAIL
PROPOSED ZONING	MIXED USE-URBAN

BUILDING SUMMARY

Four-Story Tuck-under Residential

BUILDING	STUDIO	1 BR					1 BD + DEN			2 BR						3 BR	TOTAL
	S1	A1	A2	A3	A3A	A5	A1A	A1B	A4	B1	B2	B3	B4	B5	B6	C1	
A		9	11	12	2			3		24	3	11	2			2	79
B	12	10		21					18	3		7	8				79
C	4	9		9		1		3		9		11	8	3			57
D	4	13		8						9		8			3	8	53
E	4	10		18			3		12	18		14					79
	24	51	11	68	2	1	3	6	30	63	3	51	18	3	3	10	**347**
TOTAL	24	133					39			141						10	
	6.9%	14.7%	3.2%	19.6%	0.6%	0.3%	0.9%	1.7%	8.6%	18.2%	0.9%	14.7%	5.2%	0.9%	0.9%	2.9%	**100%**
	7%	38%					11%			41%						2.9%	

Parking Summary - Required Parking

Unit Type	Number of Units	Required Ratio	Required Total Stalls	15% Reduction for Req. Dedication Res. Parking Ratio	15% Reduction for Req. Dedication Res. Parking Total Stalls
Studio	24	1.00	24		
1 BR	133	1.50	200		
1 BR + DEN	39	2.00	78		
2 BR	141	2.00	282		
3 BD	10	2.00	20		
Total Residential	347		**604**		
Total Required		**1.74**	**604**	**1.48**	**513**

Accessible Stalls:			Required Accessible		Provided Accessible
Dwelling Stalls Residential	513	2%	10.2595	=11 Req'd	9
Accessible Van Parking	1 per 6 H/C stalls		9 H/C + 2 H/C van stalls		2

Parking Summary - Provided Parking

Parking Type	Total Provided	Total	Total
Dedicated Secured - 1 Car Garage	84	451	**513**
Dedicated Secured - 2 Car Tandem	40		
Dedicated Secured - 1 Car Garage (Tandem)	58		
Dedicated Secured - Tandem	58		
Dedicated Secured - Carports	185		
Dedicated Secured - Standard Stalls	26		
Dedicated Unsecured - Standard Stalls	41	62	
Dedicated Unsecured - Compact Stalls	2		
Dedicated Unsecured - Carports	19		
Shared Parking	91		91
Total Provided	**604**	**513**	**604**

(E.V.C.S.) ELECTRIC VEHICLE STALLS REQUIRED (9' x 18')	QUAN.	RATIO	REQ'D
E.V.C.S. - RESIDENTS	513	0.10	52
E.V.C.S. - LEASING	0	TABLE 5.106.5.3.3	0
TOTAL EVCS STALLS REQUIRED (INCLUDED IN TOTAL PARKING COUNT)			**52**
(E.V.C.S.) ELECTRIC VEHICLE ACCESSIBLE STALLS REQUIRED (9' x 18')	QUAN.	RATIO	REQ'D
E.V.C.S. - RESIDENTS	52	0.10	6
E.V.C.S. - LEASING	0	TABLE 11B-228.3.2.1	0
TOTAL ELECTRIC VEHICLE STALLS REQUIRED (INCLUDED IN E.V.C.S. PARKING COUNT)			**6**

Bikes Requirements			Required		Provided
Short-term	604	5%	30.2	=31 Req'd	32
Long-term	604	5%	30.2	=31 Req'd	35

UNIT SUMMARY

Unit	Unit SF	Qty.	SF TOT.*
S1	594	24	14,256
A1	765	51	39,015
A2	748	11	8,228
A3	784	68	53,312
A3A	784	2	1,568
A5	967	1	967
A1A	874	3	2,622
A1B	917	6	5,502
A4	881	30	26,430
B1	1,086	63	68,418
B2	1,240	3	3,720
B3	1,164	51	59,364
B4	1,256	18	22,608
B5	1,337	3	4,011
B6	1,057	3	3,171
C1	1,384	10	13,840
Avg.	**942**	**347**	**327,032**

* RESIDENTIAL UNIT NET AREA

PRIVATE OPEN SPACE PROVIDED

Unit	Deck SF	Qty.	SF TOT.*
S1	50	24	1,200
A1	64	51	3,264
A2	54	11	594
A3	64	68	4,352
A3A	50	2	100
A5	64	1	64
A1A	56	3	168
A1B	52	6	312
A4	66	30	1,980
B1	64	63	4,032
B2	64	3	192
B3	64	51	3,264
B4	56	18	1,008
B5	64	3	192
B6	67	3	201
C1	60	10	600
Avg.	**62**	**347**	**21,523**

* RESIDENTIAL BALCONY AREA

BUILDING AREA (GSF)

Building Type	Level 1	Level 2	Level 3	Level 4	Total
A	30750	26387	31712	31712	120561
B	24164	23647	23647	23647	95105
C	18930	19642	19642	19642	77856
D	17214	18217	18217	18217	71865
E	26549	26911	26911	26911	107282
Detached Garage 1	692				692
Detached Garage 2	1140				1140
Detached Garage 2	1140				1140
TOTAL	119439	114804	120129	120129	**474501**

F.A.R. (GSF)

Building Type	Level 1	Level 2	Level 3	Level 4	Total
A	19590	25817	31142	31142	107691
B	15249	23062	23062	23062	84435
C	12838	19072	19072	19072	70054
D	11388	17647	17647	17647	64329
E	13766	26361	26361	26361	92849
TOTAL	72831	111959	117284	117284	**419358**

Covered Parking Summary

Parking Type	Quantity
1 Car Garage	84
2 Car Tandem	40
1 Car Garage (Tandem)	58
Dedicated Secured Carports	185
Dedicated Unsecured Carports	19
Total Provided	**386**
Percentage	**75%**

Covered Parking
(1 Covered Space Allocated for Each Unit)

Parking Type	Quantity
1 Car Garage	84
2 Car Tandem	20
1 Car Garage (Tandem) *	58
Dedicated Secured Carports *	185
Total Provided	**347**

*The tandem spaces in the table above only count towards one covered space per unit. The table above indicated that each unit will have at least one covered stall.

2 Car Tandem Distribution Parking Summary

Building Type	NO of 2 & 3 BDRM DU	TANDEM STALLS
BLDG A	42	14
BLDG B	18	12
BLDG C	31	12
BLDG D	28	20
BLDG E	32	7
Total Provided	**151**	**65**

All tandem parking stalls are designated to 2 and 3 BD units within each building type.

LOT COVERAGE

Building A	30,750
Building B	24,164
Building C	18,930
Building D	17,214
Building E	26,549
Detached Garage 1	692
Detached Garage 2	1,140
Detached Garage 3	1,140
Carports	34,152
GROSS BLDG AREA	**154,731**
GROSS SITE AREA	**432,115**
LOT COVERAGE	**0.36**

Lot coverage calculation includes covered patios, carports, and building areas.

F.A.R.

Building A	107,691
Building B	84,435
Building C	70,054
Building D	64,329
Building E	92,849
GROSS BLDG AREA	**419,358**
GROSS SITE AREA	**432,115**
F.A.R.	**0.97**

FAR calculation does not include garages, meter cabinets, exit stairs, and patios

OPEN SPACE REQUIRED

TYPE	SF	QTY	TOTAL
Private	50	347	17,350
Common	75	347	26,025
TOTAL	**125**	**347**	**43,375**

OPEN SPACE PROVIDED

TYPE	TOTAL
Private	21,523
Common	28,611
TOTAL	**50,134**
RATIO (SF/DU)	**144**

COMMON OPEN SPACE PROVIDED

OPEN AREA SECTION	
Pool Court	13,930
Dog Park	7,196
Leasing/ Mail	2,963
Club	2,136
Fitness	2,386
TOTAL	**28,611**
ADDITIONAL LANDSCAPED AREA	
Mission Grove Frontage	10,158
Mission Village Dr. Frontage	9,625
Bldg B & C Street Frontage	8,375
Interior Bldg E Frontage	6,096
TOTAL	**34,254**
GRAND TOTAL	**62,865**

Solar SF Calcs

Carport/ Bldg	SF
C1	1,017
C2	1,356
C3	1,356
C4	1,356
C5	831
C6	672
C7	1,356
C8	831
C9	1,356
C10	1,525
C11	1,008
C12	1,332
C13	2,000
C14	2,000
C15	2,000
C16	1,585
C17	4,157
C18	3,995
C19	972
BLDG A ROOF	1,900
BLDG B ROOF	1,900
BLDG C ROOF	1,900
BLDG D ROOF	1,900
BLDG E ROOF	1,803
Total Provided	**40,108**

ANTON DEV CO

MISSION GROVE APARTMENTS

Riverside, CA

Anton Mission Grove, LLC

PROJECT INFORMATION

Architecture. Design. Relationships.

G1.1

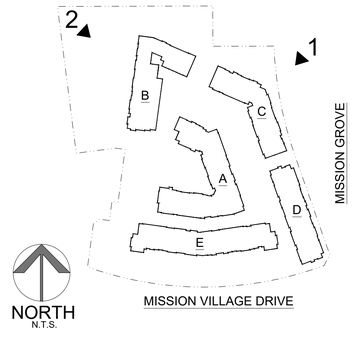
Job No. 2021-505

Date 8-8-2022

View 1: Looking South-West from Mission Grove Project Entry

View 2: Looking South-East from Existing Retail Parking

KEY MAP



ANTON DEV CO

MISSION GROVE APARTMENTS

Riverside, CA

Anton Mission Grove, LLC

Building Perspectives

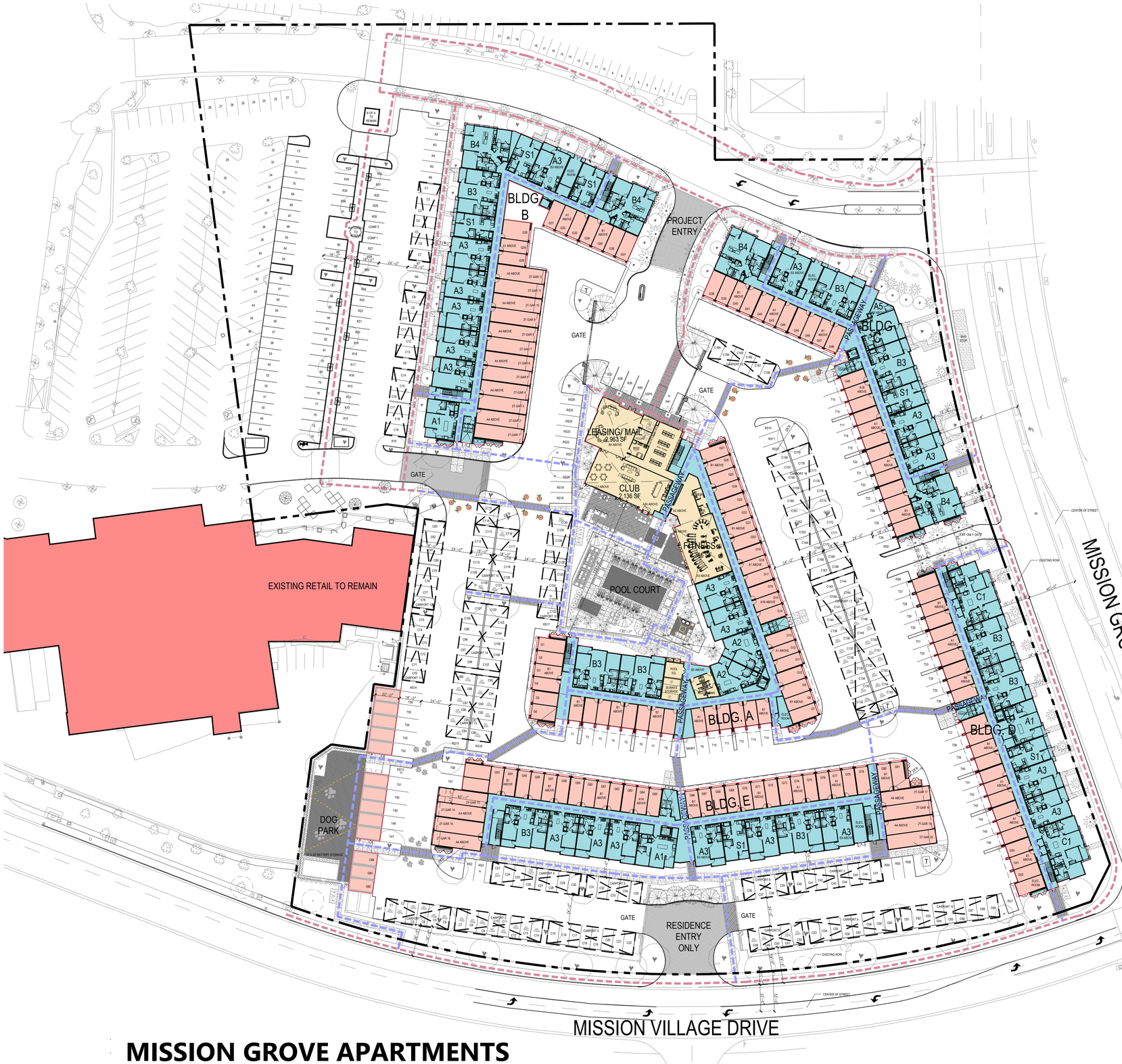
Architecture. Design. Relationships.

A1.0

Scale

Job No. 2021-505

Date 8-8-2022



LEGEND

- RESIDENTIAL PARKING GARAGE
- RESIDENTIAL APARTMENTS
- RESIDENTIAL AMENITY SPACE
- EXISTING RETAIL
- RESIDENTIAL PEDESTRIAN PATH OF TRAVEL
- PUBLIC PEDESTRIAN PATH OF TRAVEL

SITE PLAN DATA:

SITE AREA:	9.92 AC
UNITS:	347 DU
DENSITY:	35 DU/AC

NOTES:

1 Standard stalls are 9'x18'
1 car garage size is 10'x20'
Tandem stalls are 9'x18'
2 car tandem garage is 10'x40'
Compact stalls are 8'x16'

2 EV parking stalls to be studied for location and minimum size.

3 The existing water easement to be relocated off site.

4 The existing B of A and watermill kiosks to remain in place.

NORTH

1"=40'-0" 0 20' 40' 80' 120'

ANTON DEV CO

MISSION GROVE APARTMENTS

Riverside, CA

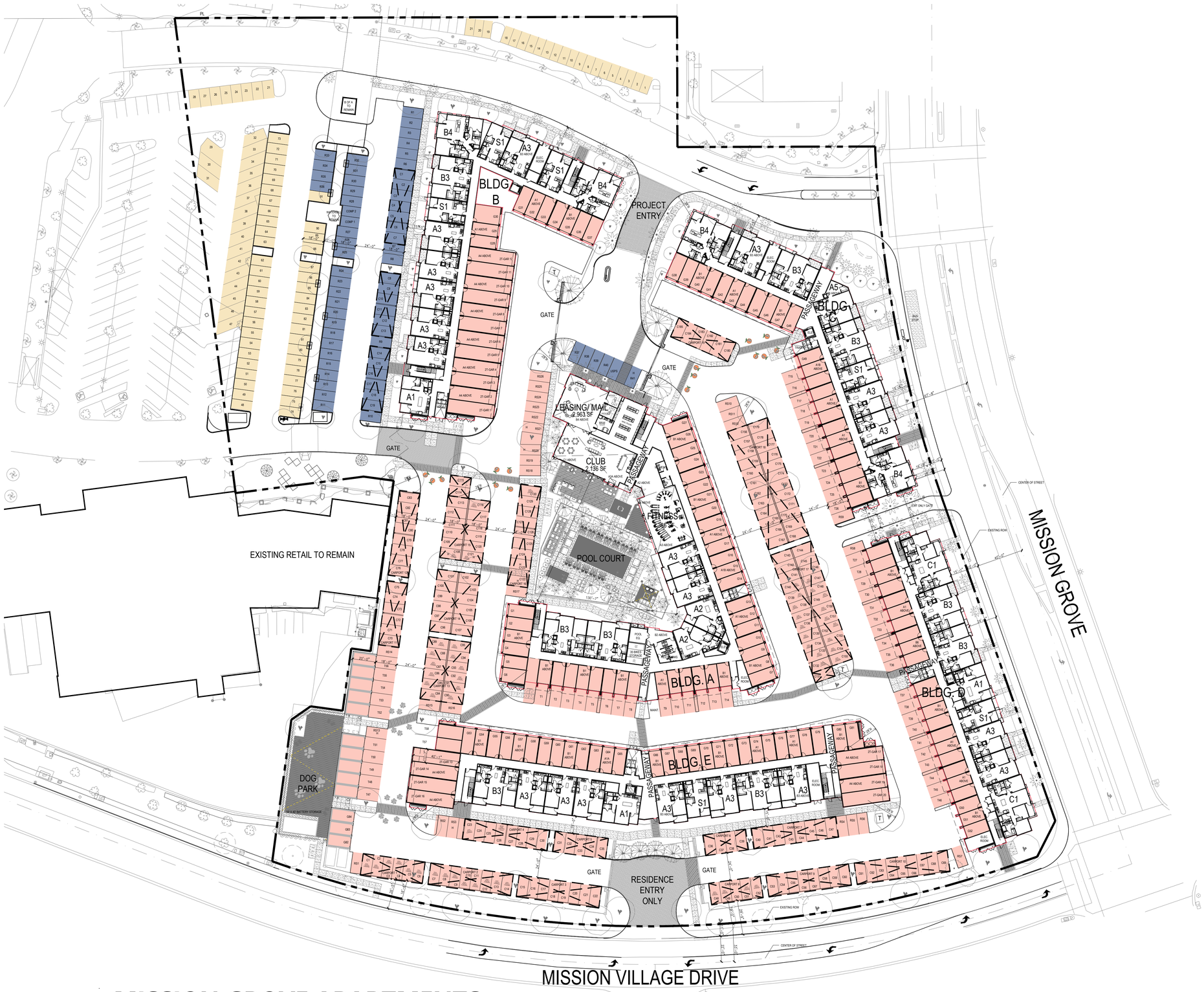
Anton Mission Grove, LLC

SITE PLAN

Architecture. Design. Relationships.

A1.1

Scale 1" = 40'
Job No. 2021-505
Date 8-8-2022



LEGEND

1-91	SHARED PARKING
C1-19	DEDICATED UNSECURED CARPORTS
R1-38	DEDICATED UNSECURED STANDARD STALLS
COMPACT 1-2	DEDICATED UNSECURED COMPACT STALLS
G1-84	DEDICATED SECURED 1 CAR GARAGE
2T-GAR1-20	DEDICATED SECURED 2 CAR TANDEM GARAGE
T1-58	DEDICATED 1 CAR GARAGE + TANDEM STALL
C1-185	DEDICATED SECURED CARPORTS
RS1-26	DEDICATED SECURED STANDARD STALL

Parking Summary - Provided Parking

Parking Type	Total Provided	Total	Total
Dedicated Secured - 1 Car Garage	84	451	513
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Dedicated Secured - Tandem	58		
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Dedicated Secured - Standard Stalls	26		
Dedicated Unsecured - Standard Stalls	41	62	
Dedicated Unsecured - Compact Stalls	2		
Dedicated Unsecured - Carports	19		
Shared Parking	91		91
Total Provided	**604**	**513**	**604**

NORTH

1"=40'-0" 0 20' 40' 80' 120'

ANTON DEV CO

MISSION GROVE APARTMENTS

Riverside, CA

Anton Mission Grove, LLC

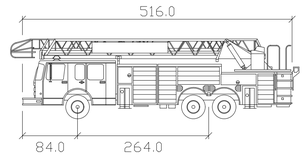
PARKING ALOCATION PLAN

Architecture. Design. Relationships.

A1.2

Scale 1" = 40'
Job No. 2021-505
Date 8-8-2022

FIRE ACCESS LEGEND



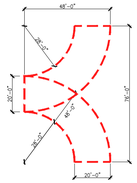
FIRE TRUCK

Aerial Fire Truck

	inches
Width	: 102.0
Track	: 102.0
Lock to Lock Time	: 6.0
Steering Angle	: 33.3

EXISTING/ PROPOSED HYDRANT

FIRE TRUCK



TYPICAL TURNING RADIUS

150' FIRE HOSE LENGTH

CLEAR FIRE LANE/ FIRE ACCESS

EXIT STAIR ACCESS

GURNEY SIZE ELEVATOR ACCESS

NORTH

1"=40'-0" 0 20' 40' 80' 120'

MISSION GROVE APARTMENTS

Riverside, CA

Anton Mission Grove, LLC

FIRE ACCESS PLAN

Architecture. Design. Relationships.

A1.3

Scale	1" = 40'
Job No.	2021-505
Date	8-8-2022

LEGEND

COMMON OPEN SPACE

PRIVATE OPEN SPACE

OPEN SPACE REQUIRED			
TYPE	SF	QTY	TOTAL
Private	50	347	17,350
Common	75	347	26,025
TOTAL	**125**	**347**	**43,375**

OPEN SPACE PROVIDED	
TYPE	TOTAL
Private	21,523
Common	28,611
TOTAL	**50,134**
RATIO (SF/DU)	**144**

COMMON OPEN SPACE PROVIDED	
OPEN AREA SECTION	
Pool Court	13,930
Dog Park	7,196
Leasing/ Mail	2,963
Club	2,136
Fitness	2,386
TOTAL	**28,611**
ADDITIONAL LANDSCAPED AREA	
Mission Grove Frontage	10,158
Mission Village Dr. Frontage	9,625
Bldg B & C Street Frontage	8,375
Interior Bldg E Frontage	6,096
TOTAL	**34,254**
GRAND TOTAL	**62,865**

PRIVATE OPEN SPACE PROVIDED			
Unit	Deck SF	Qty.	SF TOT.*
S1	50	24	1,200
A1	64	51	3,264
A2	54	11	594
A3	64	68	4,352
A3A	50	2	100
A5	64	1	64
A1A	56	3	168
A1B	52	6	312
A4	66	30	1,980
B1	64	63	4,032
B2	64	3	192
B3	64	51	3,264
B4	56	18	1,008
B5	64	3	192
B6	67	3	201
C1	60	10	600
Avg.	**62**	**347**	**21,523**

* RESIDENTIAL BALCONY AREA

NORTH

1"=40'-0" 0 20' 40' 80' 120'

ANTON DEV CO

MISSION GROVE APARTMENTS

Riverside, CA

Anton Mission Grove, LLC

OPEN SPACE PLAN

Architecture. Design. Relationships.

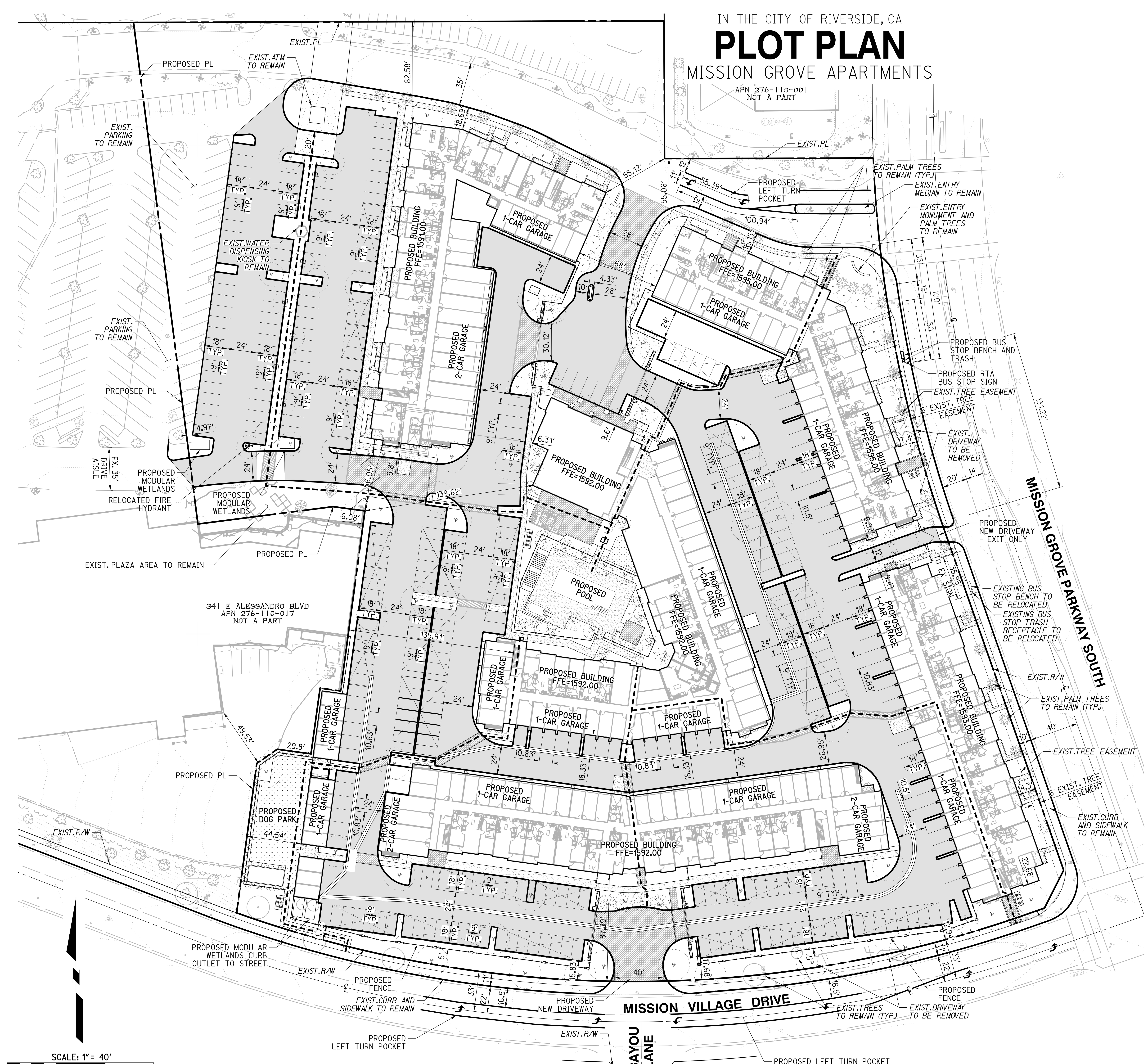
A1.4

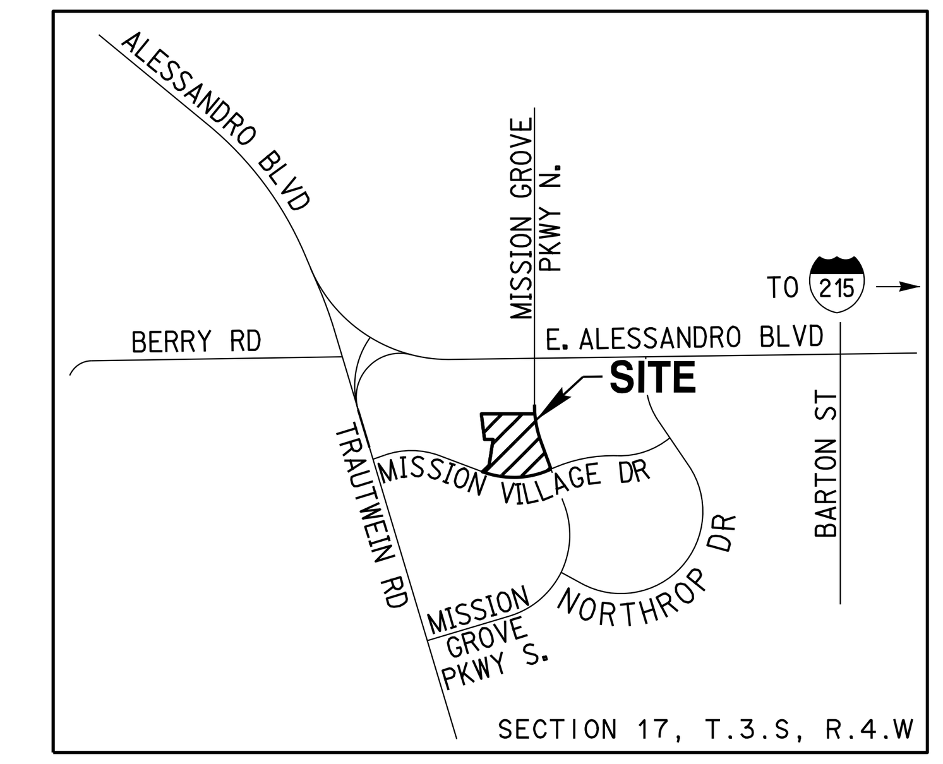
Scale 1" = 40'
Job No. 2021-505
Date 8-8-2022

IN THE CITY OF RIVERSIDE, CA

PLOT PLAN

MISSION GROVE APARTMENTS





VICINITY MAP

N.T.S.

LEGEND

- EXISTING FIRE HYDRANT
- EXISTING LIGHT
- EXISTING SEWER MANHOLE
- EXISTING SIGN
- EXISTING WATER METER
- EXISTING WALL
- EXISTING PALM TREE
- EXISTING TREE
- PROPOSED SITE LIGHT
- PROPOSED WROUGHT IRON FENCE
- PROPOSED CONCRETE
- PROPOSED AC PAVEMENT
- PROPOSED DECORATIVE PAVERS
- PROPOSED RIBBON GUTTER
- PROPOSED CURB
- PROPOSED PATH OF TRAVEL
- PROJECT BOUNDARY

CIVIL ENGINEER

RICK ENGINEERING COMPANY
1770 IOWA AVENUE, SUITE 100
RIVERSIDE, CA 92507
PHONE: (951) 782-0707
ATTN: KRISTIN WERKSMAN,
RCE 69317

DEVELOPER

ANTON MISSION GROVE, LLC
1676 N CALIFORNIA BLVD, SUITE 250
WALNUT CREEK, CA 94596
PHONE: (650) 549-1613

ARCHITECT

AO ARCHITECTS
144 N ORANGE STREET
ORANGE CA, 92866
(714) 639-9860

OWNER

REGIONAL PROPERTIES
9201 WILSHIRE BLVD, SUITE 103
BEVERLY HILLS, CA 90210
ATTN: MICHELLE RUBIN
PHONE: (310) 513-1776

PROJECT ACREAGE

9.92 AC - 432,115 SF

ASSESSOR'S PARCEL NUMBER

276-110-018

SITE ADDRESS

375 E ALESSANDRO BLVD
RIVERSIDE CA, 92508

PLOT PLAN
MISSION GROVE APARTMENTS

CITY OF RIVERSIDE
IN THE COUNTY OF RIVERSIDE, CALIFORNIA

DATE PREPARED: JUNE 7, 2022
DATE REVISED: AUGUST 5, 2022

SHEET 1 OF 5

RICK ENGINEERING COMPANY
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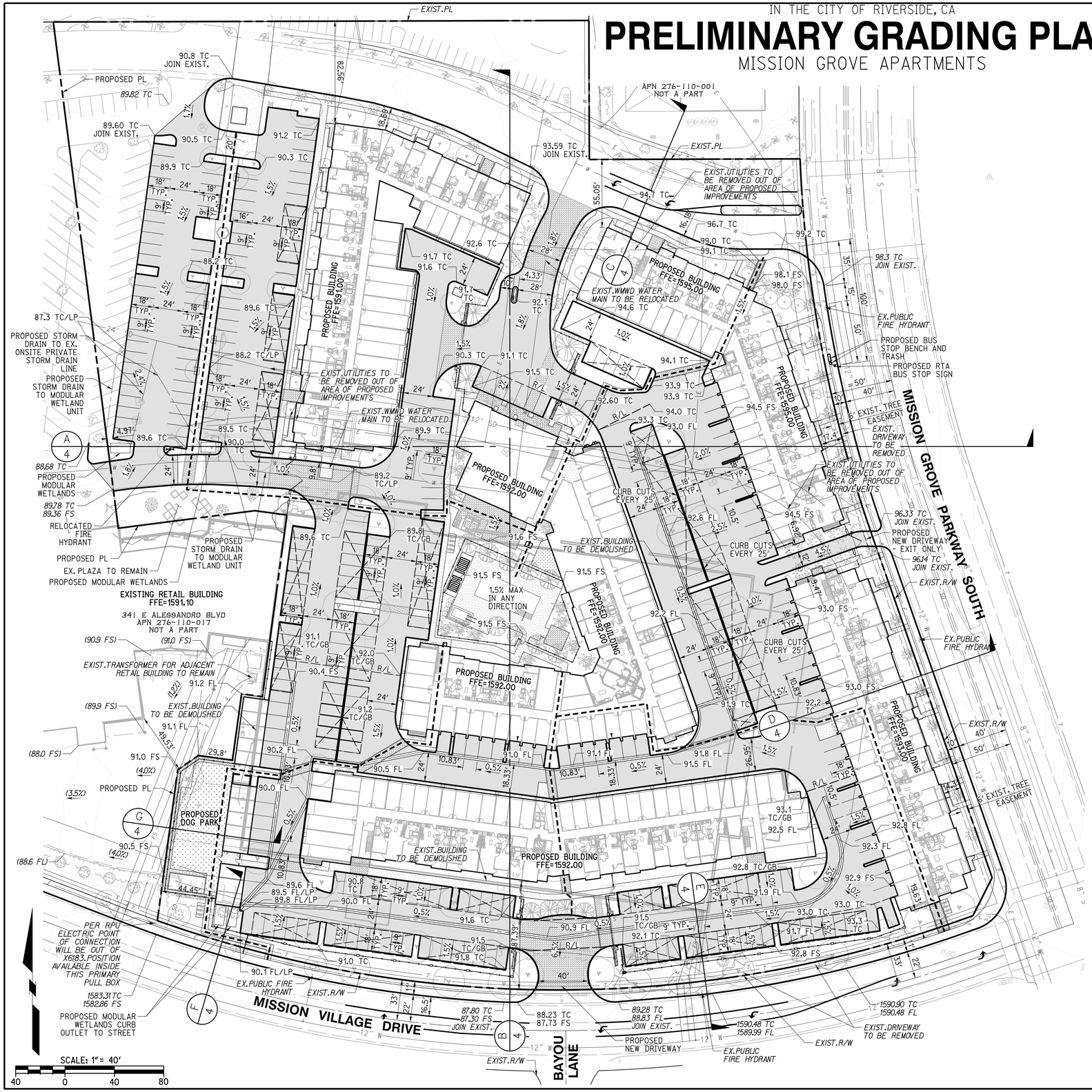
PLOT DATE: 05-AUG-2022 JN 19550A

IN THE CITY OF RIVERSIDE, CA

PRELIMINARY GRADING PLAN

MISSION GROVE APARTMENTS



ABBREVIATIONS

C&G	CURB AND GUTTER
℄	CENTERLINE
EX	EXISTING
FFE	FINISHED FLOOR ELEVATION
FG	FINISHED GRADE ELEVATION
FL	FLOW LINE ELEVATION
FS	FINISHED SURFACE ELEVATION
IE	INVERT ELEVATION
PL	PROPERTY LINE
R/L	RIDGELINE
R/W	RIGHT-OF-WAY
S/W	SIDEWALK
TC	TOP OF CURB ELEVATION
TG	TOP OF GRATE ELEVATION
TW	TOP OF WALL ELEVATION
TYP	TYPICAL

LEGEND

- EXISTING ELECTRICAL
- EXISTING ELECTRICAL VAULT
- EXISTING GAS VALVE
- EXISTING IRRIGATION VALVE
- EXISTING LIGHT
- EXISTING POWER POLE
- EXISTING SEWER MANHOLE
- EXISTING SIGN
- EXISTING TREE
- EXISTING WATER METER
- EXISTING WALL
- EXISTING WATER VALVE
- EXISTING PALM TREE
- EXISTING TREE
- PROPOSED SITE LIGHT
- PROPOSED WROUGHT IRON FENCE
- PROPOSED CONCRETE
- PROPOSED AC PAVEMENT
- PROPOSED DECORATIVE PAVERS
- PROPOSED RIBBON GUTTER
- PROPOSED CURB
- PROPOSED PATH OF TRAVEL
- PROJECT BOUNDARY

ESTIMATED GRADING QUANTITIES

ESTIMATED EXCAVATION:	5,118 C.Y.
ESTIMATED EMBANKMENT:	5,950 C.Y.

NOTE: THE GRADING QUANTITIES SHOWN HEREON ARE RAW QUANTITIES FOR PERMIT PURPOSES ONLY AND ARE NOT TO BE USED FOR FINAL PAY QUANTITIES. THIS PROJECT IS DESIGNED TO BALANCE.

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ASSESSOR'S PARCEL NUMBER

276-110-018

SITE ADDRESS

375 E ALESSANDRO BLVD
RIVERSIDE CA, 92508

PRELIMINARY GRADING PLAN
MISSION GROVE APARTMENTS
CITY OF RIVERSIDE
IN THE COUNTY OF RIVERSIDE, CALIFORNIA
DATE PREPARED: JUNE 7, 2022
DATE REVISED: AUGUST 5, 2022
SHEET 3 OF 5

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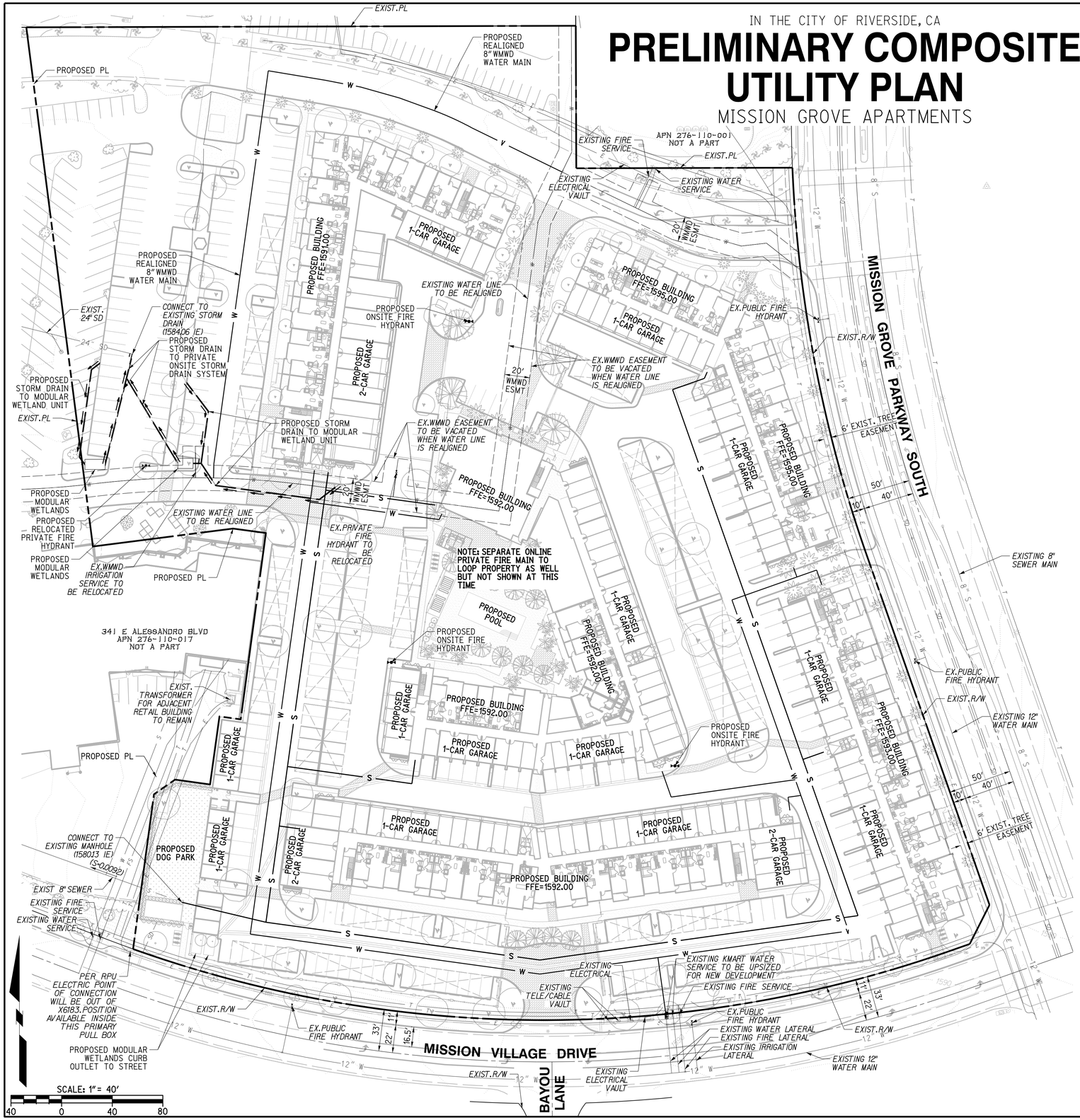
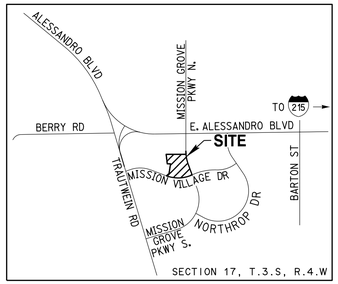
IN THE CITY OF RIVERSIDE, CA

PRELIMINARY COMPOSITE UTILITY PLAN

MISSION GROVE APARTMENTS





VICINITY MAP

N.T.S.

PROPOSED LEGEND

PROPOSED FIRE SERVICE	FS
PROPOSED DOMESTIC SERVICE	W
PROPOSED SEWER LATERAL	S
PROPOSED FIRE HYDRANT	
PROPOSED STORM DRAIN	
PROJECT BOUNDARY	
PROPOSED ELECTRICAL	E

TOPOGRAPHY LEGEND

EXISTING BOLLARD	
EXISTING CATCH BASIN	CB
EXISTING ELECTRICAL MANHOLE	E
EXISTING FIRE HYDRANT	
EXISTING LIGHT	
EXISTING PALM TREE	
EXISTING SEWER MANHOLE	S
EXISTING STORM DRAIN MANHOLE	SD
EXISTING SIGN	
EXISTING WATER METER	WM
EXISTING WALL	
EXISTING TREE	
EXISTING WATER	W
EXISTING SEWER	S
EXISTING STORM DRAIN	SD
EXISTING OVERHEAD POWER	OHE

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9.97 AC - 434,223 SF

ASSESSOR'S PARCEL NUMBER

276-110-018

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PRELIMINARY COMPOSITE UTILITY PLAN
MISSION GROVE APARTMENTS

CITY OF RIVERSIDE
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SHEET 5 OF 5

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