

Crestview Apartments

Draft Environmental Impact Report (DEIR)

Appendix J – Sewer Capacity Study

August 19, 2020

Mr. Eugene Marini
KA Enterprises
5820 Oberlin Drive, Suite 201
San Diego, CA 92121

Subject: Crestview Apartments Sewer Capacity Evaluation – City of Riverside

Dear Mr. Marini:

Thank you for hiring Carollo Engineers, Inc., to provide KA Enterprises with a study to understand the impacts that the proposed Crestview Apartments development has on the City of Riverside's modeled collection system.

The results of our evaluation are presented in this letter report, which starts on the next page.

Thank you for the opportunity to provide services to your company. Should you need additional information or have questions regarding our evaluation and the findings presented in the report, please do not hesitate to contact us.

Sincerely,

CAROLLO ENGINEERS, INC.

Graham J.G. Juby, Ph.D., P.E.
Senior Project Manager | Vice President

GJJ:blm

Enclosure

cc: Mr. Chris Scully, City of Riverside (CScully@riversideca.gov)
Mr. Mike Wetterau, Carollo Engineers, Inc.

This document is released for the purpose of information exchange review and planning only under the authority of Graham J.G. Juby, August 19, 2020, California 67217.

CRESTVIEW APARTMENTS – SEWER CAPACITY EVALUATION

Background

KA Enterprise plans to develop vacant land with High Density Residential (HDR) land use in the City of Riverside (City). The planned project, the Crestview Apartments (Crestview), is located at the northwest corner of Central Avenue and Sycamore Canyon Boulevard. A copy of the Environmental Impact Report's scoping meeting is included as Attachment A. The purpose of this study is to understand the impact that the Crestview 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. Crestview will connect to an existing 21-inch diameter sewer along Central Avenue west of Sycamore Canyon Boulevard. Figure 1 shows the 21-inch sewer relative to the planned development and Crestview's proposed point of connection to the existing sewer system.

KA Enterprise plans to develop 9.44 acres of vacant land with 237 dwelling units (DUs). This information and the total acreage were used to determine that the new land use is HDR. KA Enterprises' proposed HDR land use differs from the 2019 General Plan's commercial land use for this area. Crestview's estimated dry weather flow (DWF) was developed by Carollo using the same method as in the Master Plan Update and is summarized in Table 1. For the purpose of the hydraulic evaluation, the net additional loads associated with the project were allocated to the modeled manhole as DWF.

Table 1 Dry Weather Flow – Summary

| Description | Area (ac) | Loading ⁽¹⁾ (gpd/ac) | DWF (gpd) |
|-----------------------------|-----------|---------------------------------|-----------|
| Existing – Commercial | 9.44 | 710 | 6,701 |
| New - HDR ⁽²⁾⁽³⁾ | 9.44 | 2,800 | 26,425 |
| Net Additional Loads | -- | -- | 19,725 |

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*.

(2) DU Density = 25.1 DU/ac = 237 DU / 9.44 ac.

(3) Source: City of Riverside, General Plan (2019). HDR allows a maximum of 29.0 DUs per acre.

Crestview occupies the same acreage as in the Master Plan Update. Thus, Carollo assumed no change to wet weather flow (WWF) contribution by the proposed development from rain-derived inflow and infiltration (RDII).



Evaluation Criteria

The evaluation criteria used in 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 a number of 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 in order 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 Crestview and confirms the recommended improvement project sizing developed in the Master Plan Update.

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 connection for DWF and WWF from the Crestview development. The purpose of the existing system evaluation is to verify that the existing system improvements were appropriately sized to convey existing PWWFs plus Crestview flows and to identify new locations of sewers that cannot convey the increased flows. The Master Plan Update did not identify any existing system improvements to be included downstream of the proposed Crestview development, other than those already identified by the City.

The evaluation showed that the City's existing collection system has sufficient capacity to convey proposed PWWFs downstream of Crestview without exceeding the established flow depth criterion. The hydraulic analysis showed that the Master Plan Update's proposed existing collection system projects are adequately sized to handle the change in the land use type at the proposed point of connection.

Future Hydraulic Evaluation

The analysis of the future system was performed in a manner similar to 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 already identifies one future system improvement downstream of Crestview.

The timing of growth under build-out 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 Crestview Apartments did not identify new system deficiencies not already identified in the Master Plan Update. The hydraulic analysis showed that the proposed Master Plan Update's proposed future projects are adequately sized for the change in land use type at the proposed point of connection.

Conclusion

KA Enterprises plans to develop a vacant lot with HDR land use through a development called Crestview. The proposed development changes the land use type compared to what was used in the Master Plan Update. The City's collection system has sufficient capacity to convey existing PWWFs downstream of Crestview without exceeding the established flow depth criteria. The future PWWF evaluation did not identify new capacity deficiencies, assuming other recommended capacity improvements from the Master Plan Update were implemented. The evaluations showed that the proposed Master Plan Update's proposed improvement project downstream of Crestview are adequate to meet the requirements of the proposed development. As a result, no changes to the Master Plan Update are recommended to mitigate this proposed land use change.

Attachment A

CRESTVIEW APARTMENTS
ENVIRONMENTAL IMPACT REPORT
SCOPING MEETING



City of Riverside
Crestview Apartments
Environmental Impact Report

SCOPING MEETING
JULY 22, 2020

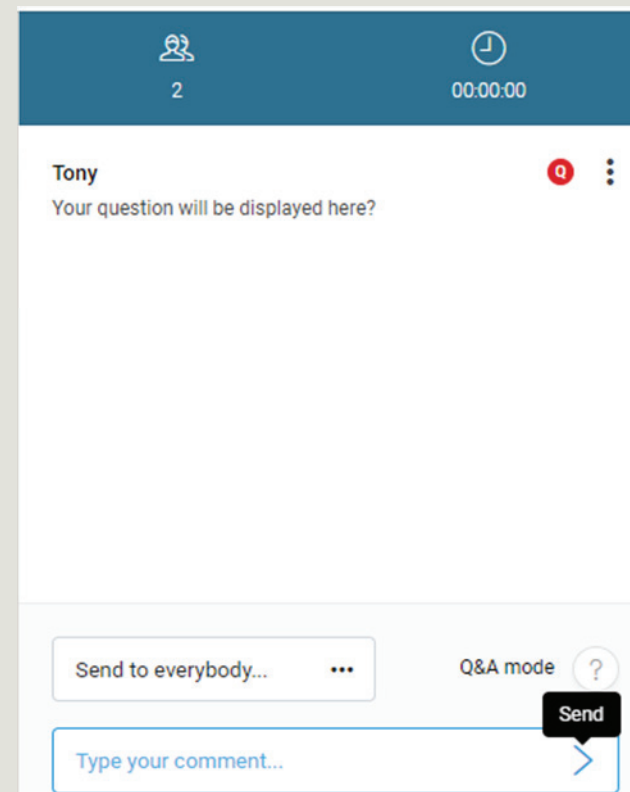




Purpose of Meeting: Receive your input

How:

- Webinar is being recorded, including submitted comments and questions via the “chat” feature
- Chat feature is on now for any questions as we get started. Will be turned off during presentation. Will open chat at end of presentation for receiving your comments.
- We cannot answer detailed questions about the environmental analysis until it is completed.





Applicant: KA Enterprises

Lead Agency: City of Riverside

Primary Consulting Team: Ruth Villalobos and Associates, Inc.





The Purpose of the California Environmental Quality Act (CEQA)

- Disclose the potential significant environmental impacts of proposed projects
- Identify ways to avoid or reduce adverse environmental impacts
- Consider feasible alternatives to proposed project that reduce impacts
- Foster interagency coordination in the review of projects
- Enhance public participation in the planning process





The Purposes of the CEQA Scoping Meeting

Inform the community and agencies about the project and the Environmental Impact Report (EIR)

Solicit input regarding the EIR scope

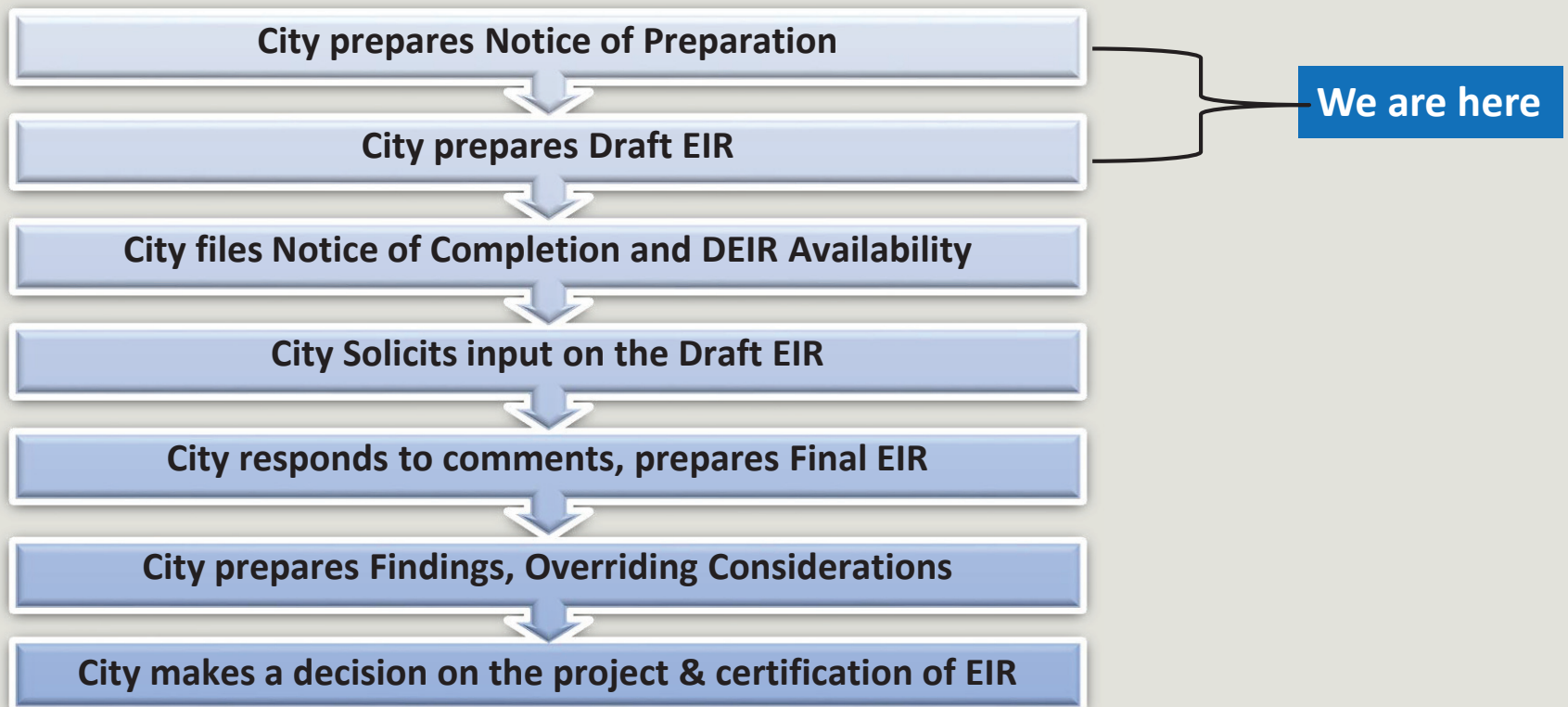
Inform the community about future opportunities for input

Scoping Period: June 30, 2020 – July 30, 2020



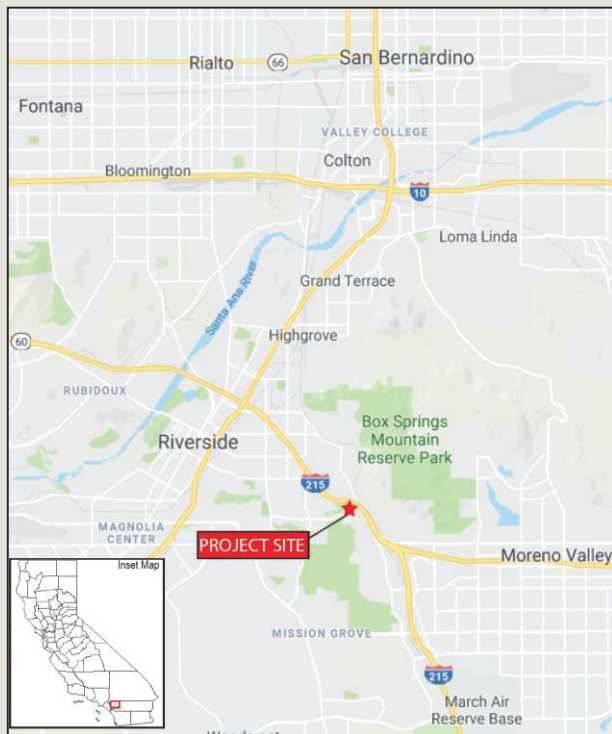


The EIR Process





Project Location | Context

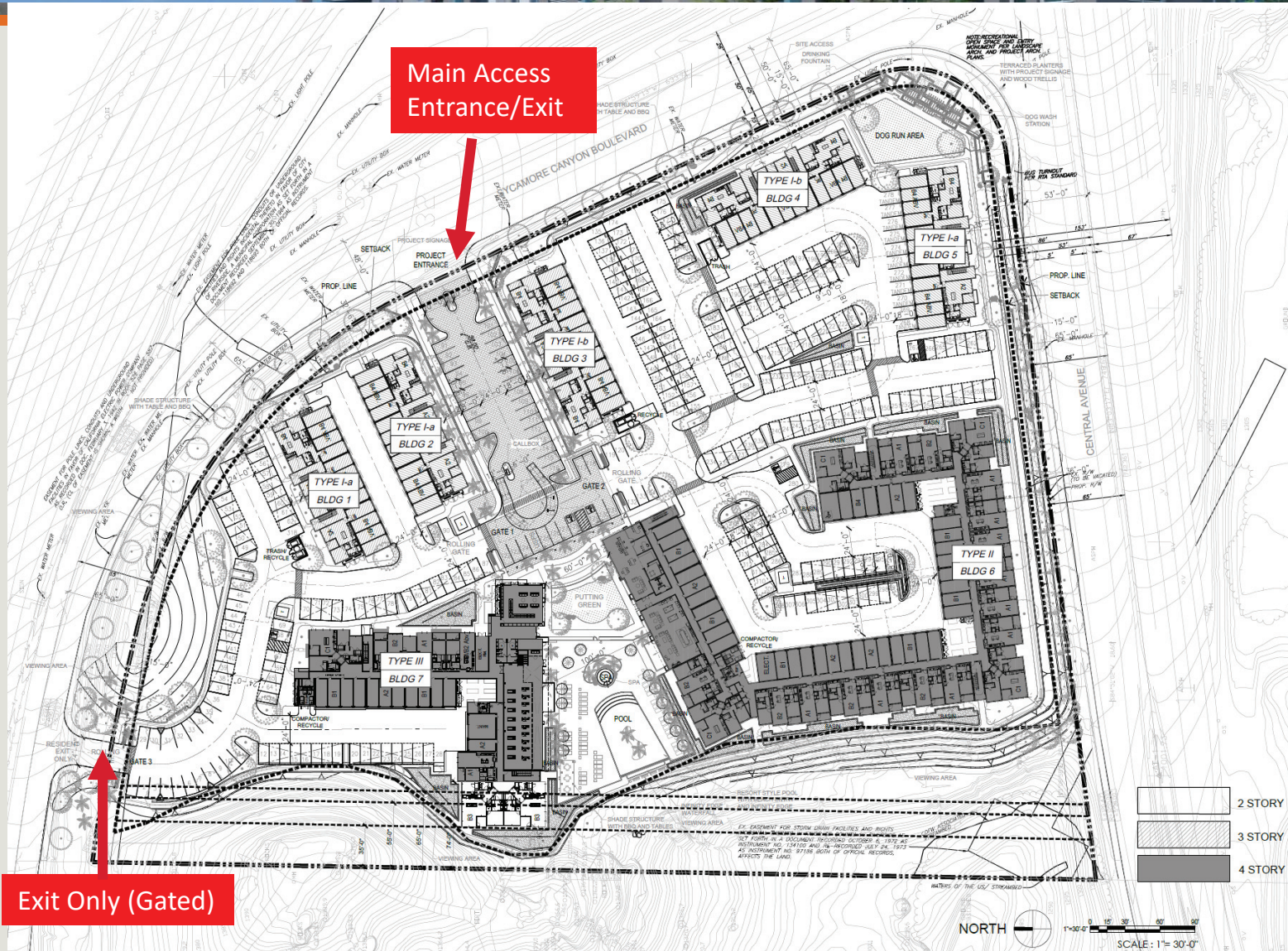




Project Description

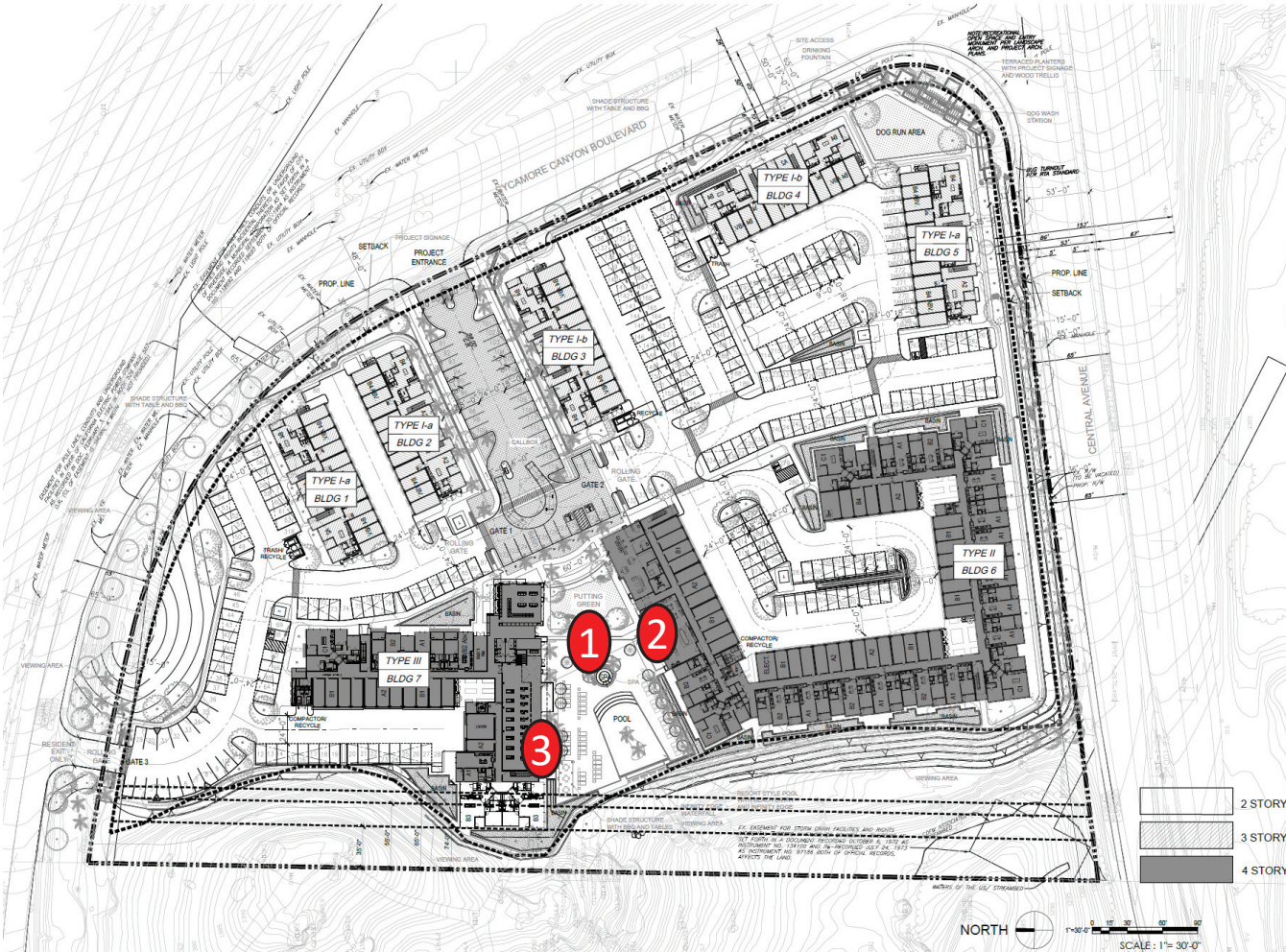
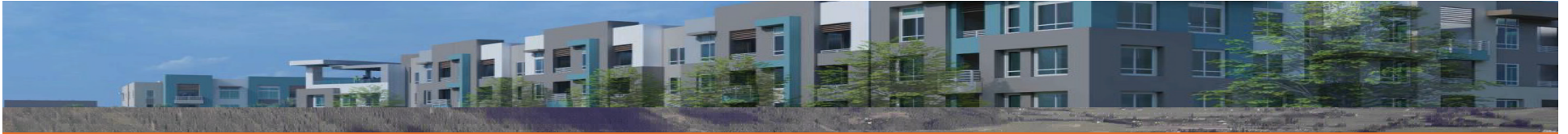
- 9.44 –acre project site, 237 residential apartment units (7 buildings)
- Entitlements: General Plan & Zoning Code Amendments, Variance, Grading Exceptions, Summary Vacation, Design Review
- Access from Sycamore Canyon Boulevard
- Onsite leasing office, garages, carports, mail lounge, putting green, outdoor resort style pool and spa, dog run area with a dog wash station, fitness center, clubhouse, shade structures with barbecues and tables, and a walking perimeter loop trail (1/2 mile).
- Approx. 1.5 years of construction, beginning 2021 and opening in 2023.





Site Plan





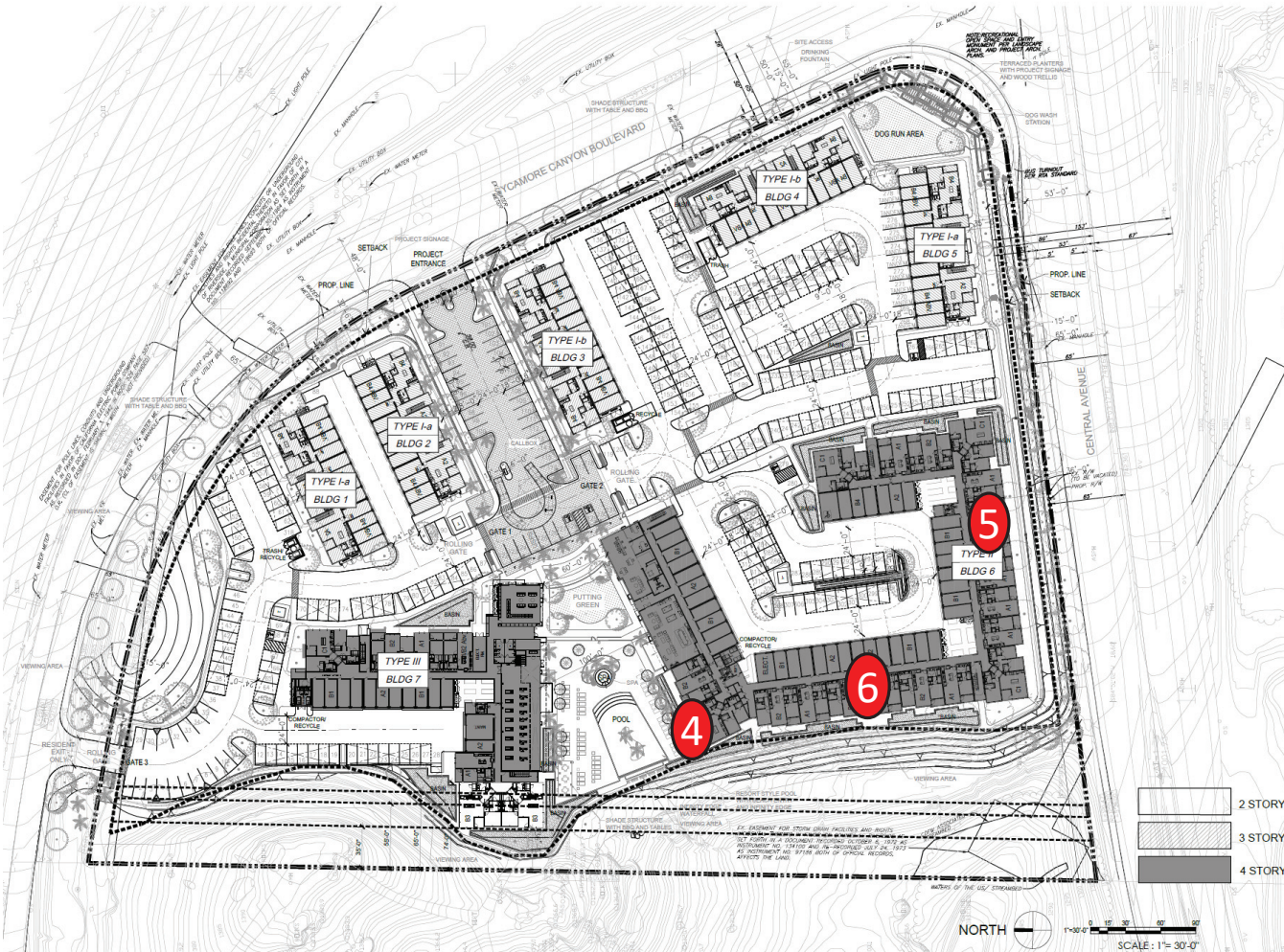
VIEW TO POOL AREA



VIEW TO LEASING / CLUBHOUSE



VIEW TO FITNESS CENTER



VIEW TO ROOF GARDEN

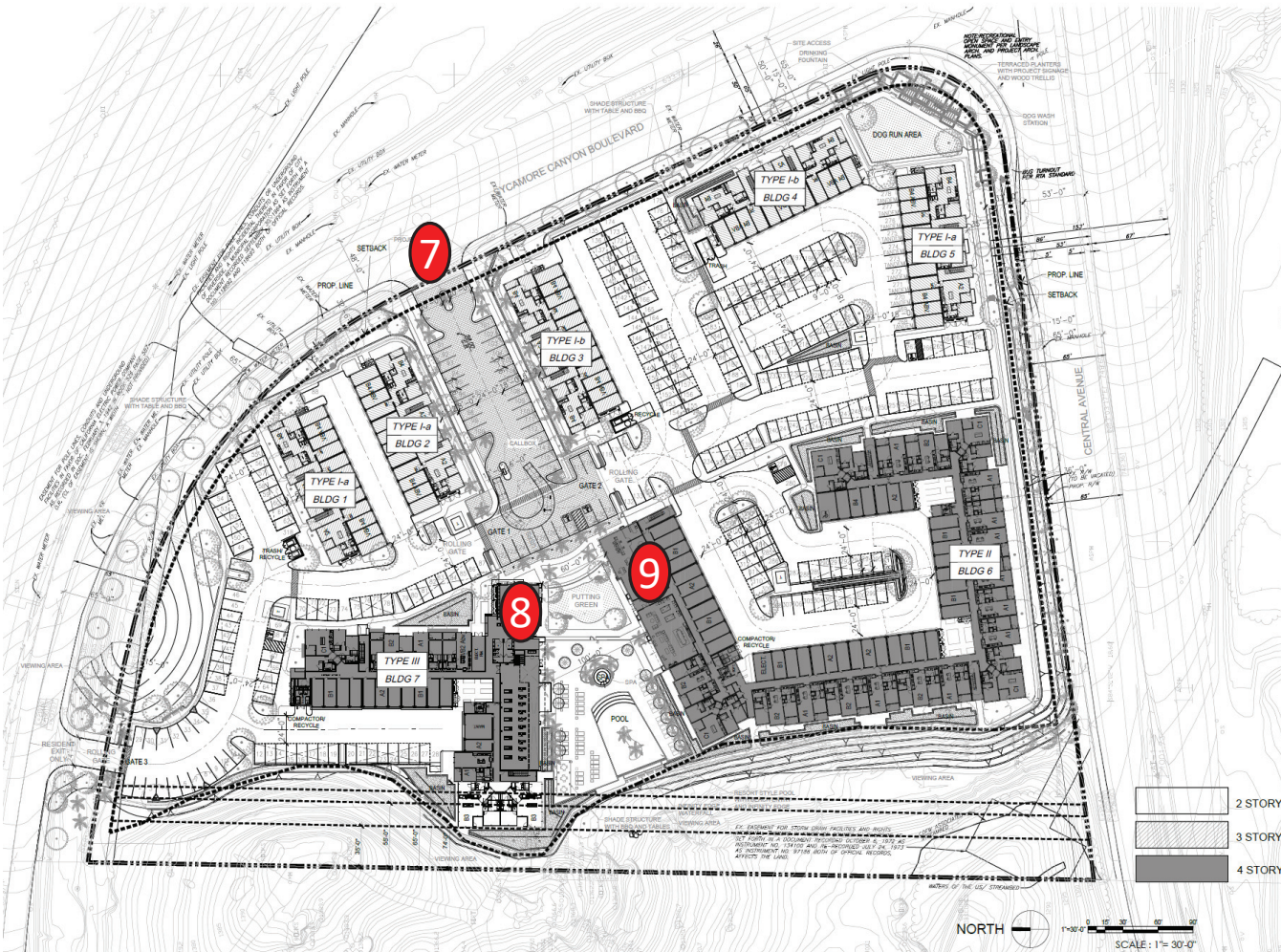
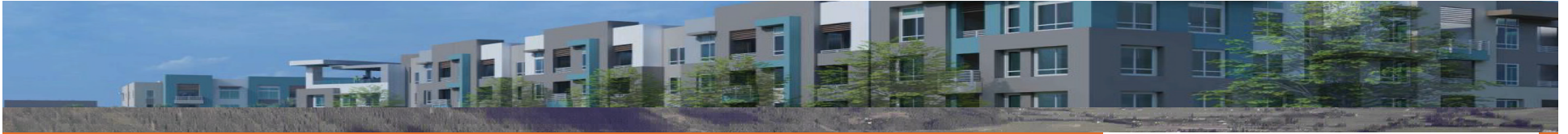


BUILDING 6 VIEW FROM CENTRAL AVE.



WEST VIEW PERSPECTIVE





PROJECT MAIN ENTRANCE VIEW

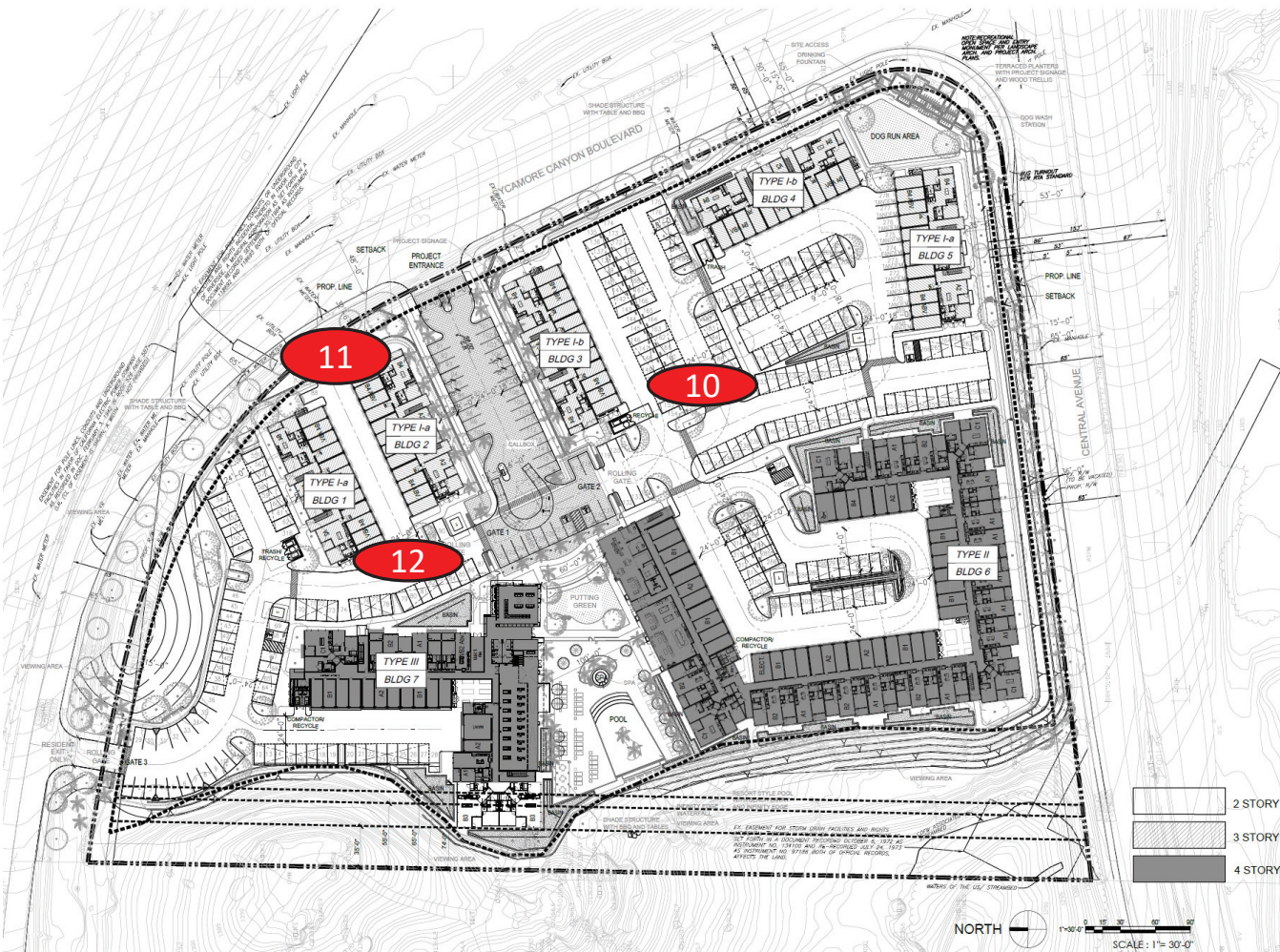


AMENITY VIEW 1



AMENITY VIEW 2





BUILDING 3 PERSPECTIVE



BUILDING 1 & 2 VIEW FROM SYCAMORE CANYON BLVD.



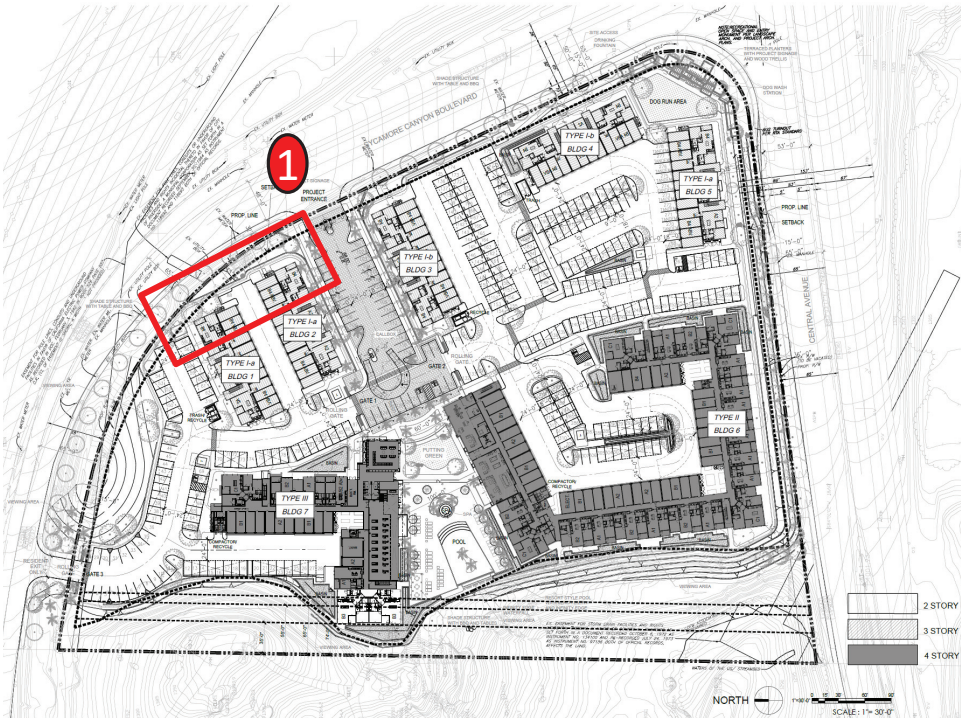
INTERNAL STREET VIEW



Project Overview | Crestview Apartments | 12



Street Facing Elevations (Sycamore Canyon Blvd Building 1 and 2)



Exterior Elevation Keynotes

- 1. Plaster Wall
- 3. Vinyl Window
- 6. Metal Railing
- 10. Decorative Gate

LEFT ELEVATION

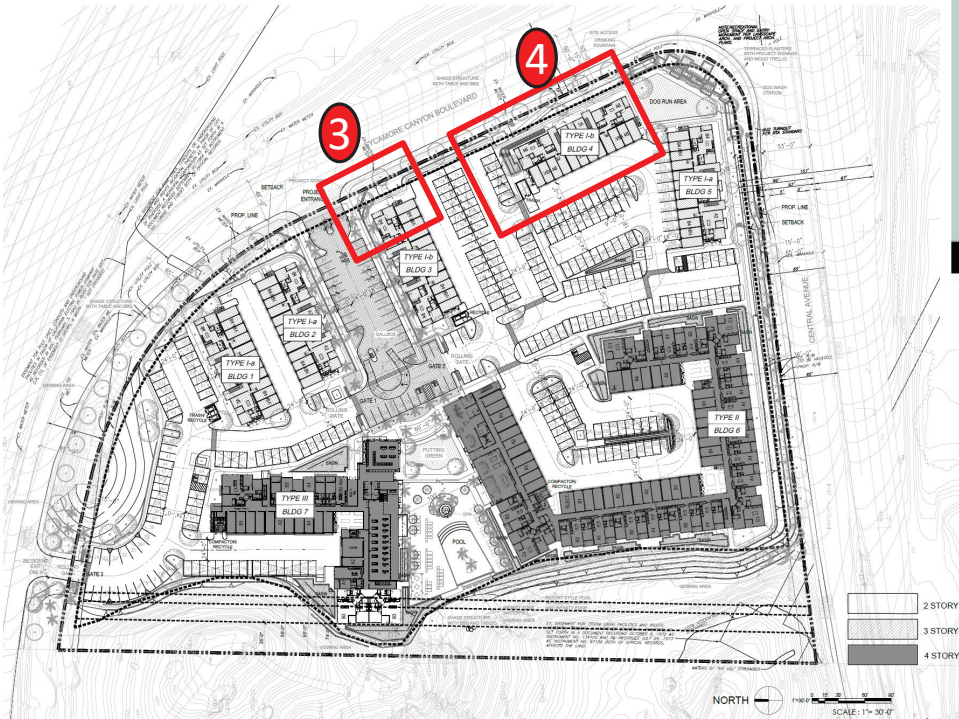


BUILDING 1 & 2 VIEW FROM SYCAMORE CANYON BLVD.





Street Facing Elevations (Sycamore Canyon Blvd Building 3 and 4)



Exterior Elevation Keynotes

1. Plaster Wall
2. Awning
3. Vinyl Window
6. Metal Railing
9. Stucco Patio Wall
10. Decorative Gate
11. Metal Canopy
12. Hand Tooled Joint



RIGHT ELEVATION



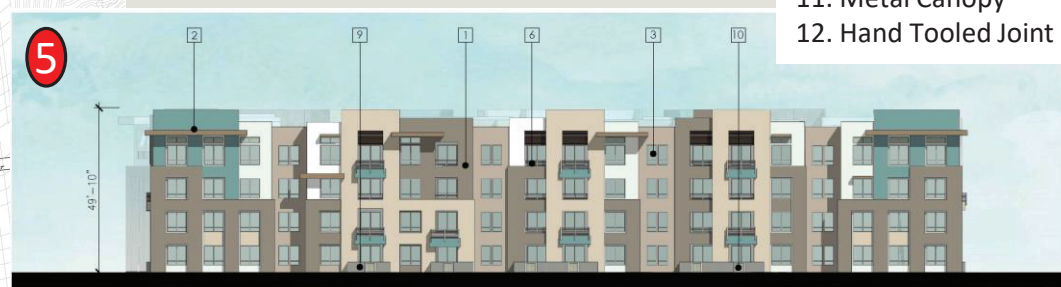
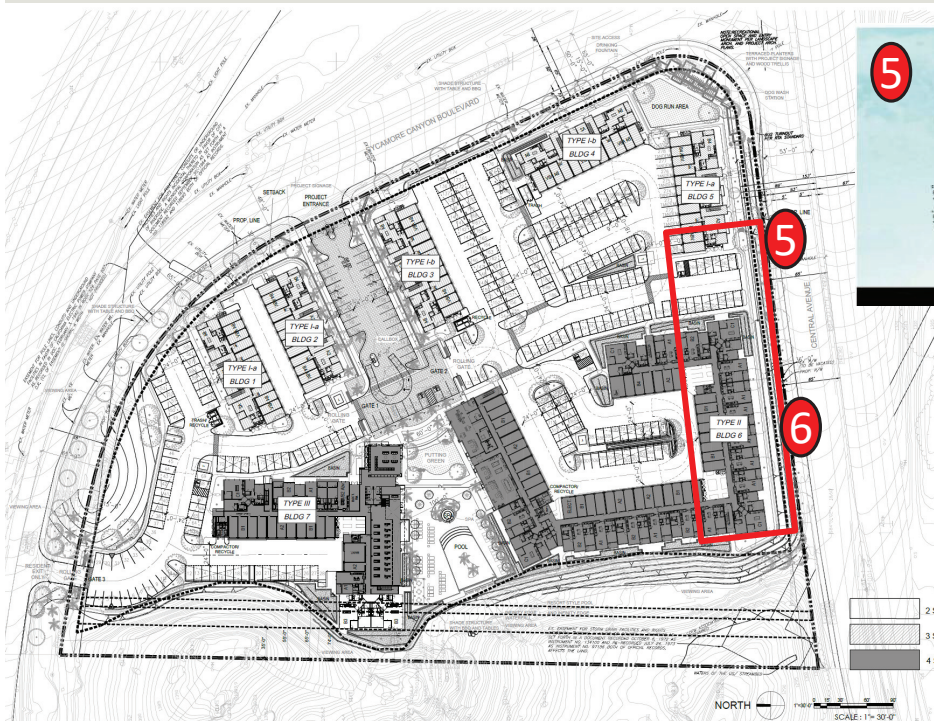
FRONT ELEVATION



Street Facing Elevations Central Ave - (Building 5 and 6)

Exterior Elevation Keynotes

1. Plaster Wall
2. Awning
3. Vinyl Window
6. Metal Railing
9. Stucco Patio Wall
10. Decorative Gate
11. Metal Canopy
12. Hand Tooled Joint



FRONT ELEVATION



FRONT ELEVATION



EIR Topics (Preliminary Scope)

Aesthetics

Agriculture & Forestry Resource*

Air Quality

Biological Resources

Cultural Resources

Energy Conservation

Geology & Soils

Greenhouse Gas Emissions

Hazards & Hazardous Materials*

Hydrology & Water Quality*

Land Use & Planning

Mineral Resources*

Noise

Population & Housing*

Public Services*

Recreation*

Transportation

Tribal Cultural Resources

Utilities & Service Systems

Wildfire

*topics analyzed in Initial Study





EIR | Detailed Impact Sections

Aesthetics

- Visual Character
- Light and Glare

Air Quality

- Construction
- Operation

Biological Resources

- Sensitive Species/Habitats
- Compliance with the MSHCP

Cultural Resources

- Historical Resources
- Archeological Resources



EIR | Detailed Impact Sections

Energy

- Consumption of Energy Resources
- Compliance with Renewable Energy Plans

Geology & Soils

- Soil Conditions
- Seismicity/Faults & Landslides

Greenhouse Gas Emissions

- Construction & Operation emissions
- Compliance with CAP

Land Use & Planning

- General Plan Consistency
- Land Use and Zoning Change



EIR | Detailed Impact Sections

Noise

- Construction Noise
- Operational Noise

Transportation

- Conflict with Circulation System
- Vehicle Miles Traveled

Tribal Cultural Resources

- Tribal Cultural Resources
- AB 52 & SB 18 Consultations

Utilities & Service Systems

- Water Supply
- Wastewater Treatment Capacity
- Solid Waste

Wildfire

- Public Services/Fire Protection
- Emergency Response/ Evacuation Plans
- Wildfire Risk



EIR | Detailed Impact Sections

Cumulative Impacts: Consider the impacts of other development/projects in combination with The Crestview Apartments project

Alternatives:

- CEQA requires an analysis of a “reasonable range” of alternatives
- At least 3 alternatives will be analyzed, including the required “No Project” alternative
- Project alternatives to be determined during analysis of Draft EIR



EIR Schedule

Notice of Preparation (NOP) published June 30, 2020

Close of NOP period: *July 30, 2020 by 5:00 p.m.*

Public Review of Draft EIR: *December 2020 - estimated*

Response to Comments/Final EIR: *Spring 2021*

Final EIR/Project Hearings: *Summer 2021*

All CEQA documents & notices on City's website at
<https://riversideca.gov/cedd/planning/development-projects-and-ceqa-documents>





We Welcome Your Comments...

- On the scope, focus, and content of the EIR

Via US Mail To:

Candice Assadzadeh, Senior Planner

City of Riverside

Community and Economic Development Department - Planning Division

3900 Main Street, 3rd floor

Riverside, California 92522

Or Via Email To:

cassadzadeh@riversideca.gov

***All comments to be submitted by
July 30, 2020 by 5:00 p.m.***





Instructions to Submit Questions/Comments

To provide a comment or question – use the chat feature at the bottom right of the webinar room.

Your question or comment will be sent to the presenter and can be viewed by other attendees.

