

Wastewater Disposal Report
For
Solace Apartments
El Paso County, CO

January, 2020

Prepared for:
Jackson Dearborn Partners
404 S Wells St, Suite 400
Chicago, IL 60607
734-216-2577

Prepared by:
JR Engineering, LLC
5475 Tech Center Drive, Suite 235
Colorado Springs, CO 80919
719-593-2593

JR Project No. 25174.00

TABLE OF CONTENTS

1.1.	Purpose	1
1.2.	Summary of Proposed Development	1
1.3.	Wastewater Service.....	1
1.4.	District Capacity.....	1

Appendix

A.	Vicinity Map
B.	Proposed Site Plan
C.	Utility Service Plan
D.	Sanitary Loading Analysis
E.	Service Commitment Letter

1.1. Purpose

This document is intended to serve as the Wastewater Disposal Report for Solace Apartments. The purpose of this document is to show that the proposed wastewater discharge is within the acceptance capacity of the Cherokee Hills Metropolitan District. This report satisfies the requirements set forth by the El Paso County Land Development Code, Section 8.4.8.D (Wastewater Disposal - Public System).

1.2. Summary of Proposed Development

The proposed Solace Apartments, known as “Solace” from herein, is a parcel of land located in Section 7, Township 14 South, Range 65 West of the 6th Principal Meridian in El Paso County, Colorado. Solace is a 28.99 acre, urban, multifamily-development, and is comprised of 16 apartment dwellings and associated infrastructure. Solace is bound by existing industrial developments to the North and vacant land to the West. Galley Road bounds the property to the south and existing light industrial businesses to the east. Solace will be broken into two phases, with phase one containing the majority of the development and phase two consisting of the northern part of the development. Phase 1 of Solace will include 234 units and phase 2 will contain 114 units for a total of 348 units. Please see the site plan in appendix B for the developments phasing. A vicinity map of the area is presented in Appendix A. As previously mentioned, the Cherokee Hills Metropolitan District will provide and service the water and sanitary sewer to this development. Refer to the vicinity map and proposed site plan in Appendix A and Appendix B, respectively.

1.3. Wastewater Service

The development will be served by standard 6-inch PVC service lines and 8-inch PVC sanitary sewer main lines. The 8-inch PVC sanitary sewer will tie into an existing manhole in Conrad St. Refer to Appendix C for the proposed sanitary collection utility plan. The wastewater discharge was calculated on a per capita basis based on the total number of bedrooms being built; at one person per bedroom. It is estimated that the wastewater discharge will be approximately 39,000 gallons per day (600 bedrooms x 65 gpd/person). There will also be wastewater produced from the clubhouse, and swimming pool – the amount of wastewater from the clubhouse, and swimming pool was estimated at 1,500 gallons per day. The total average wastewater discharge from the site is 40,500 gallons per day. Refer to Appendix D for additional information such as loads, individual runs, velocity, etc.

1.4. District Capacity

As shown in Appendix E, Cherokee Hills Metropolitan District committed to serve the proposed development. The service commitment letter states that “the District’s Water Reclamation Facility (WRF) has the required capacity to meet the sewer demand for this development”. Thus, according to the service commitment letter,

the proposed development of this site will not cause a capacity issue with the District, and the District has facilities in place to accept the wastewater discharge from this site. Refer to the Service Commitment Letter in Appendix E for the volumes of capacity and current utilization of the existing treatment plant.

1.5. Waivers from Criteria

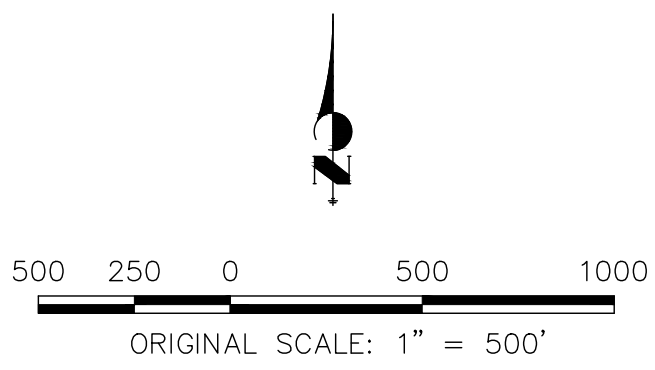
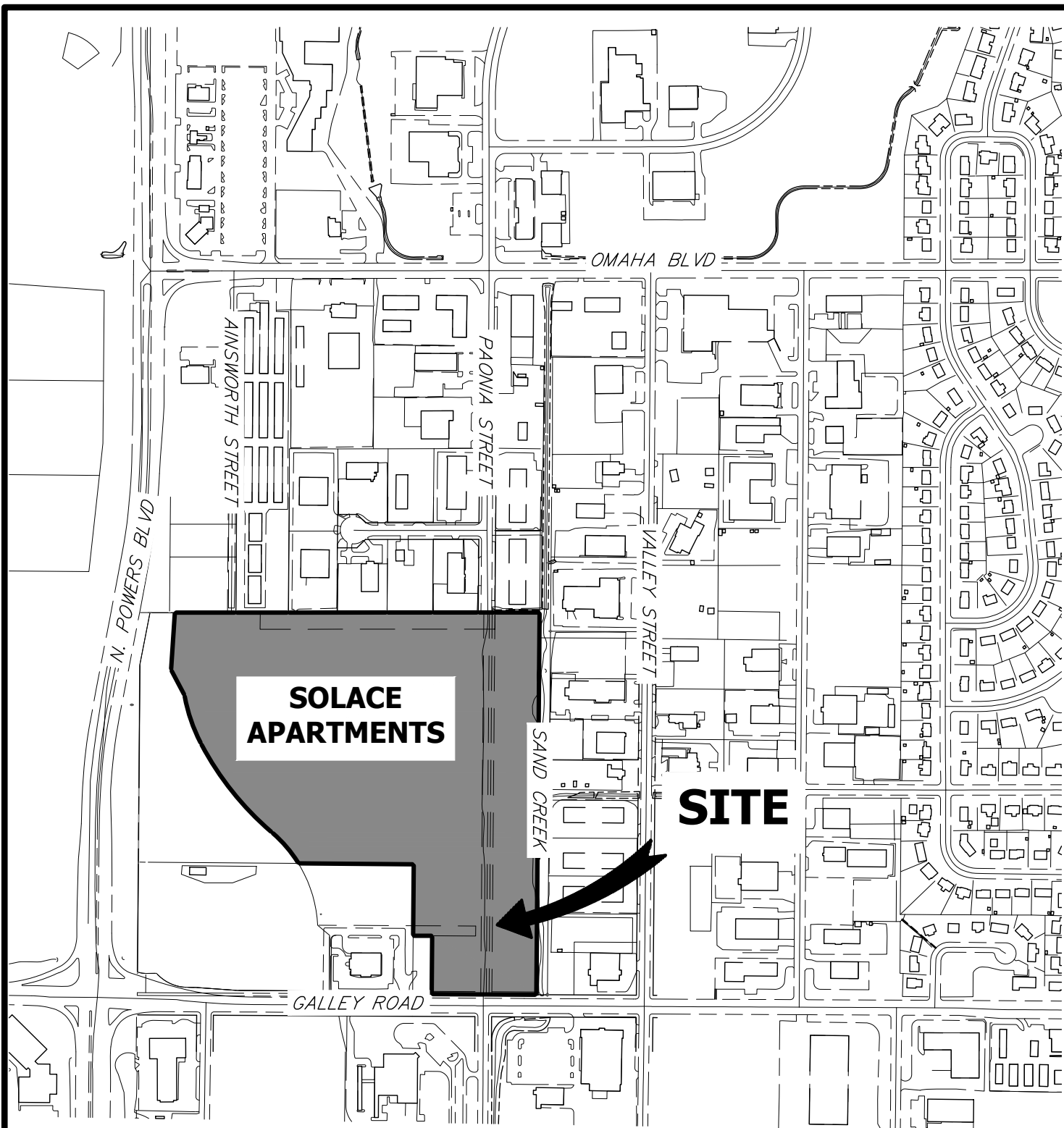
There are no waivers for the Colorado Springs Utilities Sanitary Sewer Standards and Specifications or the criteria established by the Cherokee Metropolitan District are requested for this project.

1.6. Compliance with Standards

The Sanitary sewer system, design and modeling results conform to all applicable criteria set forth by the City of Colorado Springs Utilities and the Cherokee Metropolitan District.

APPENDIX A: VICINITY MAP

X:\2510000.all\2517400\Drawings\Blocks\Vicinity Map.dwg, 8.5x11 Portrait, 12/31/2019 2:00:39 PM, FC

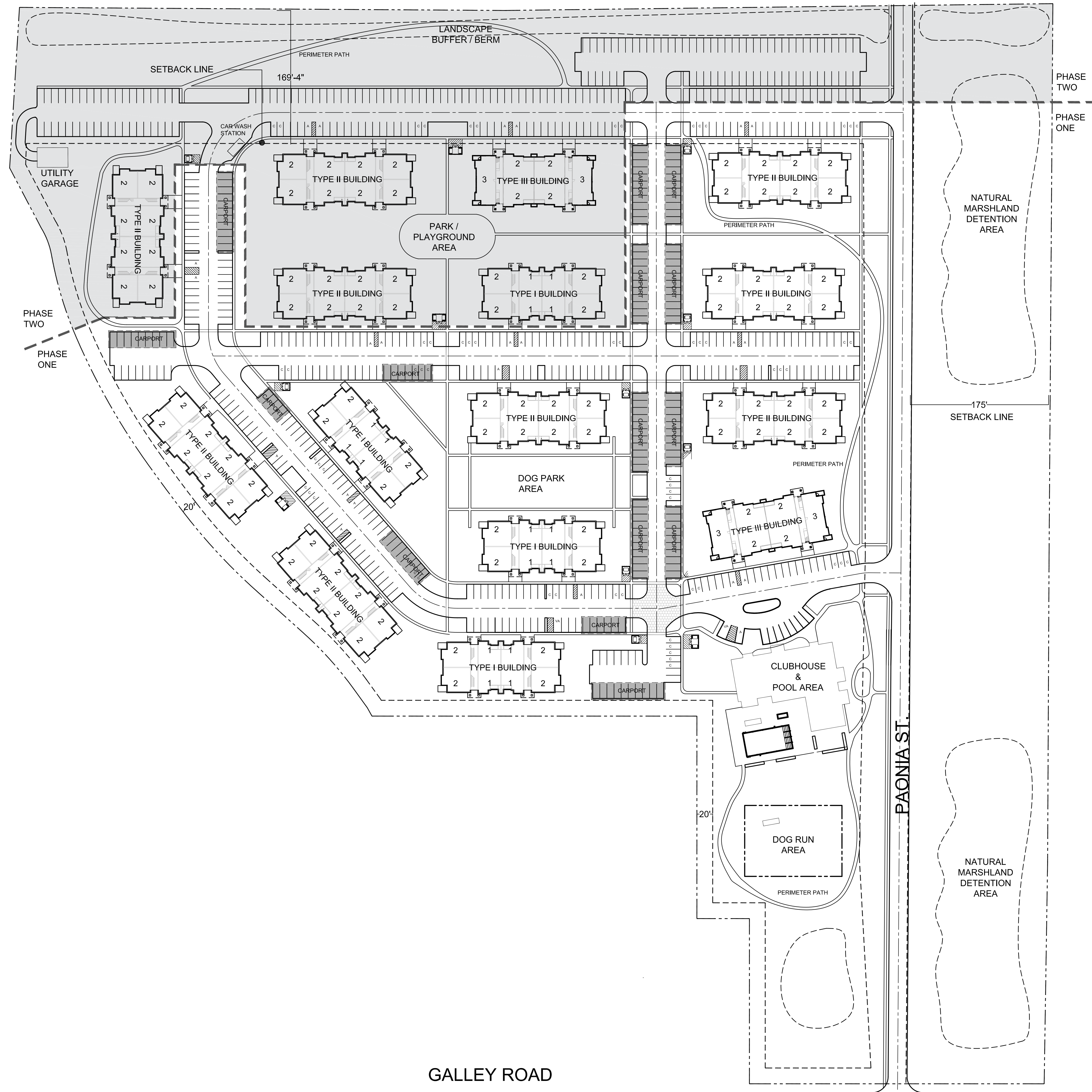


VICINITY MAP
SOLACE APARTMENTS
JOB NO. 25174.00
12/31/2019

 **J-R ENGINEERING**
A Westrian Company

Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

APPENDIX B: PROPOSED SITE PLAN



POWERS BLVD. COLORADO SPRINGS
CONCEPTUAL SITE PLAN PHASED OPT 3

NOVEMBER 1, 2019

PROJECT BREAKDOWN:

PHASE ONE:

ONE BEDROOM UNITS - 36 UNITS
TWO BEDROOM UNITS - 192 UNITS
THREE BEDROOM UNITS - 6 UNITS

TOTAL UNITS = 234 UNITS

PHASE TWO:

ONE BEDROOM UNITS - 12 UNITS
TWO BEDROOM UNITS - 96 UNITS
THREE BEDROOM UNITS - 6 UNITS

TOTAL UNITS = 114 UNITS

TOTAL PROJECT:

ONE BEDROOM UNITS - 48 UNITS
TWO BEDROOM UNITS - 288 UNITS
THREE BEDROOM UNITS - 12 UNITS

TOTAL UNITS = 348 UNITS

PHASE ONE PARKING REQUIREMENTS:

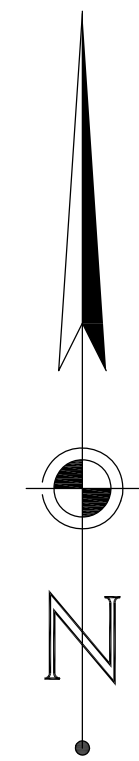
ONE BEDROOM 1.5 PER UNIT	=	54 SPACES
TWO BEDROOM 1.7 PER UNIT	=	326 SPACES
THREE BEDROOM 2 PER UNIT	=	12 SPACES
VISITOR 3 PER TOTAL UNITS	=	78 SPACES
TOTAL PARKING REQ'D	=	470 SPACES
ACCESSIBLE SPOTS REQ'D	=	9 SPACES
ACCESSIBLE SPOTS PROV.	=	16 SPACES

TOTAL PARKING PROVIDED = 470 SPACES

PHASE TWO PARKING REQUIREMENTS:

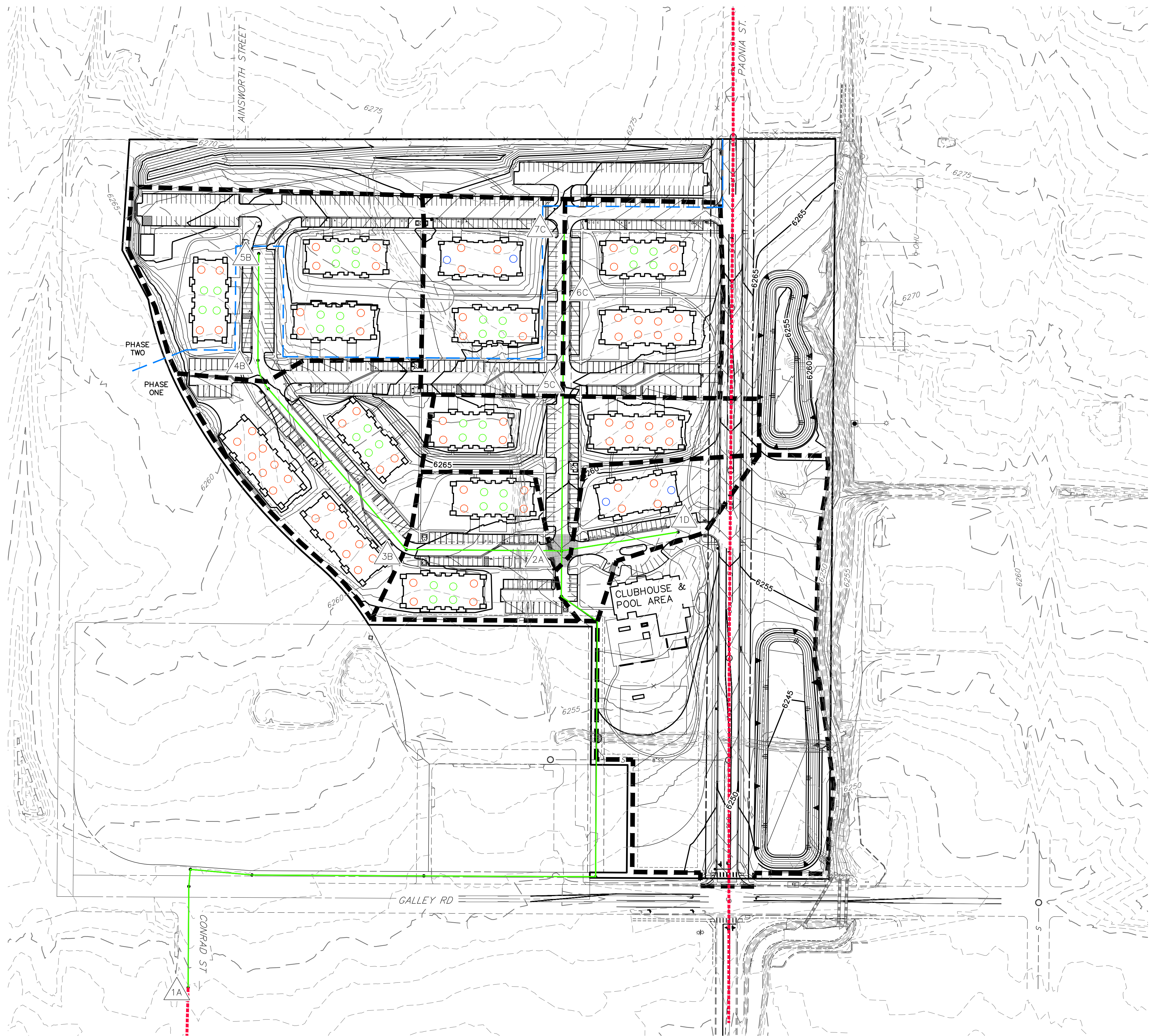
ONE BEDROOM 1.5 PER UNIT	=	18 SPACES
TWO BEDROOM 1.7 PER UNIT	=	163 SPACES
THREE BEDROOM 2 PER UNIT	=	12 SPACES
VISITOR 3 PER TOTAL UNITS	=	38 SPACES
TOTAL PARKING REQ'D	=	231 SPACES
ACCESSIBLE SPOTS REQ'D	=	5 SPACES
ACCESSIBLE SPOTS PROV.	=	10 SPACES

TOTAL PARKING PROVIDED = 231 SPACES



APPENDIX C: UTILITY SERVICE PLAN

SOLACE APARTMENTS - SANITARY SEWER MAP



LEGEND

- 8" Ø PROPOSED SANITARY SEWER
- 8" Ø EXISTING SANITARY SEWER
- PHASE LINE

DESIGN POINT



SANITARY BASIN

INDEX CONTOUR

INTERMEDIATE CONTOUR

EXISTING

6100

PROPOSED GRADE

6100

1 BEDROOM UNIT



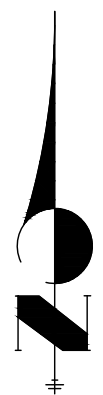
2 BEDROOM UNIT



3 BEDROOM UNIT



NOTE: ALL APARTMENTS ARE 3 STORIES AND HAVE THE SAME FLOOR PLAN ON EACH FLOOR.



100 50 0 100 200
ORIGINAL SCALE: 1" = 100'

SANITARY UTILITY
SOLACE APARTMENTS
JOB NO. 2517400
01-03-2020
SHEET 1 OF 1

 **J-R ENGINEERING**
A Westrian Company

Centennial 303-740-9993 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com

APPENDIX D: SANITARY SEWER COLLECTION ANALYSIS

ON-SITE SANITARY SEWER LOADING SUMMARY SOLACE APARTMENTS																													
Sewer Run (Trunk)	Sewer Run (Branch)	Pipe Size (in)	Pipe Slope (%)	Pipe Slope (ft/ft)	Full-Pipe Capacity (cfs)	Number of Bedrooms's Served in Run	Full Pipe Velocity (fps)	Total Number of Total Bedrooms Served	Load-Clubhouse and Pool	Load/Cap. (gpd)	Base Flow (gpd)	Base Flow (cfs)	Ave. Daily Flow (gpd)	Ave. Daily Flow (cfs)	Ave. Daily Flow * 1.1 (gpd)	Ave. Daily Flow * 1.1 (cfs)	Wetted Perimeter	Hydraulic Radius	Ave. Daily Flow Velocity (fps)	Peaking Factor	Peak Flow (gpd)	Peak Flow (cfs)	Depth in Pipe (ft)	Theta (radians)	Wetted Area (sf)	Wetted Perimeter	Hydraulic Radius	Peak Flow Velocity (fps)	% of Pipe Capacity
PHASE 1																													
6C-5C		8	0.75	0.0075	1.24	84	3.54	162	----	65	10,530	0.0163	10,530	0.0163	11,583	0.0179	0.3833	0.0344	1.24	5.0	53,703	0.0831	0.1171	1.73	0.0412	0.5765	0.0715	2.02	6.72
5C-2A		8	0.60	0.0060	1.11	84	3.17	246	----	65	15,990	0.0247	15,990	0.0247	17,589	0.0272	0.4363	0.0437	1.30	5.0	81,549	0.1262	0.1520	1.99	0.0599	0.6638	0.0903	2.11	11.41
4B-3B		8	0.60	0.0060	1.11	132	3.17	240	----	65	15,600	0.0241	15,600	0.0241	17,160	0.0266	0.4337	0.0432	1.29	5.0	79,560	0.1231	0.1502	1.98	0.0589	0.6594	0.0893	2.09	11.13
3B-2A		8	0.50	0.0050	1.01	72	2.89	312	----	65	20,280	0.0314	20,280	0.0314	22,308	0.0345	0.4735	0.0507	1.31	5.0	103,428	0.1600	0.1794	2.18	0.0757	0.7273	0.1041	2.11	15.85
	1D-2A	8	1.75	0.0175	1.89	42	5.41	42	1500	65	4,230	0.0065	4,230	0.0065	4,653	0.0072	0.2782	0.0187	1.26	5.0	21,573	0.0334	0.0616	1.24	0.0162	0.4117	0.0393	2.06	1.77
2A-1A		8	0.50	0.0050	1.01		2.89	600	1500	65	40,500	0.0627	40,500	0.0627	44,550	0.0689	0.5647	0.0690	1.61	5.0	206,550	0.3196	0.2577	2.68	0.1245	0.8946	0.1392	2.57	31.65
PHASE 2																													
	7C-6C	8	1.50	0.0150	1.75	78	5.01	78	----	65	5,070	0.0078	5,070	0.0078	5,577	0.0086	0.2958	0.0210	1.26	5.0	25,857	0.0400	0.0696	1.32	0.0194	0.4388	0.0441	2.07	2.29
	5B-4B	8	1.25	0.0125	1.60	108	4.57	108	----	65	7,020	0.0109	7,020	0.0109	7,722	0.0119	0.3268	0.0254	1.31	5.0	35,802	0.0554	0.0850	1.46	0.0259	0.4868	0.0532	2.14	3.47

APPENDIX E: SERVICE COMMITMENT LETTER



CHEROKEE METROPOLITAN DISTRICT

6250 Palmer Park Blvd., Colorado Springs, CO 80915-2842

Telephone: (719) 597-5080 Fax: (719) 597-5145

February 12th, 2020

Mike Bramlett

JR Engineering, LLC

5475 Tech Center Drive, Suite 235

Colorado Springs, CO 80919

Sent via email: mbramlett@jrengineering.com

Original to follow by US Mail

Re: Water and Sewer Service to **Solace Apartments Phase 1**
Commitment Letter No. **2020-04**

Dear Mike Bramlett,

As requested, this document will serve as a formal Letter of Commitment from the Cherokee Metropolitan District to provide municipal water and sewer services for Solace Apartments located at the northeast corner of Powers Boulevard and Galley Road. The proposed location for this development is located within the District's established boundaries and therefore is eligible for service connections from the District.

Cherokee Metropolitan District staff, along with the developer, have determined that the following will be the total water demand required by this occupancy:

Type of Use	Demand (AF/yr)
Domestic	47.0
Irrigation	14.8
Total	61.8

This water commitment is hereby made exclusively for this specific development project at this site within the District. To confirm this commitment you must provide the District with a copy of the final plat approval from El Paso County Development Services within 12 months of the date of this letter. Otherwise, the District may use this allocation for other developments requesting a water commitment. If the subject project is re-platted, you must submit a new commitment request prior to submitting the re-plat to El Paso County, which may result in a recalculation of the water demand for the project.

If I may be of further assistance please contact me at your convenience.

Sincerely,

A handwritten signature in cursive script, appearing to read "Amy Lathen", written over a horizontal line.

Amy Lathen
General Manager

Cc: Peter Johnson; Water Counsel w/ encl: sent via email
Steve Hasbrouck; Board President w/ encl: sent via email
Kevin Brown; Jr. Engineer