VCA ENGINEERS, INC.
CIVIL ■ STRUCTURAL
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SEWER CAPACITY STUDY

FOR

COMPTON COLLEGE

1111 E. ARTESIA BLVD.,
COMPTON, CA 90221

February 13, 2024

PREPARED FOR:

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1. PROJECT DESCRIPTION AND APPROACH

This sewer capacity study is prepared by VCA Engineers, Inc. to examine the existing sanitary sewer system that will have an impact on the proposed student housing building located within the campus of Compton College. The proposed housing buildings are located at 1111 E. Artesia Boulevard, CA 90221, in the northern part of the campus.

The project involves the Phase 1 construction of two separate three (3) story student housing buildings with sewer demands of 686.5 DFU (345 GPM) for Wing A with four plumbing laterals and 421.5 DFU (211 GPM) for Wing B with one plumbing lateral servicing a total of 250 beds. This study will verify how the proposed development will impact the flow capacity of the existing sewer infrastructure downstream southerly of the project location. There are two municipal downstream connections at the campus: one (1) 8-inch line discharging to a manhole owned by City of Long Beach located on the east side of the campus, and one (1) 12-inch line discharging to a manhole owned by County of Los Angeles located on the south side of the campus. These connections serve separate in-campus main sewer lines that flow from northerly upstream end to the southerly municipal connections.

This study will analyze the effect of additional sewer demands imposed by the new student housing on the 2 existing campus main lines and their discharge to the municipal points of connections. This report will provide three (3) options of routing and connections to service the student housing project:

1. Connect Wing A and B to the Long Beach Sewer System
2. Connect Wing A to the Long Beach Sewer System and Wing B to the LA County Sewer System.
3. Connect Wing A and B to the LA County Sewer System

It should be noted that the 8-inch line that discharges to the City of Long Beach Sewer System was previously servicing existing buildings that were demolished for Wing A and Wing B to be constructed.

The procedure used herein to analyze the impact of the new sewer demands to the existing sewer system is as follows:

1. New load demands (Q_N) were calculated per plumbing requirements and converted to flow rates; Fixture Units (FU) to Gallons per Minute (GPM) to Cubic feet per second (cfs).
2. The peak flowrates (Q_P) on the existing sanitary sewer system were determined by performing a sewer flow monitoring of 7 and 14 days.
3. The monitored peak flowrate was increased with a peaking factor of 2.5 per industry generally accepted standards to generate the factored peak flowrate ($Q_P * 2.5 = Q_M$). The factored peak flowrate (Q_M) will become the total existing current demand.
4. The sum of the new load demands plus the total existing current demand will become the new total sewer demand ($Q_T = Q_N + Q_M$).
5. The existing pipe's capacity (Q_C) will be calculated using Manning's Equation flowing at half full (D/d = 0.5) and with a roughness coefficient of 0.013 per LA County Department of Public Works standards.
6. If the pipe capacity is greater than the new total demand ($Q_C > Q_T$), then the existing sewer system is adequate to receive the new load demands (Q_N).

2. SITE DESCRIPTION

The proposed project site's assessor's parcel number is 7318-006-900 as per Los Angeles County Assessor Parcel Map. Its approximate coordinates are Longitude: 33° 52' 47.4" N and Latitude: 118° 12' 33.9" W. The project site is bounded around E. Greenleaf Boulevard, Harbor Avenue, Campus Drive, and Artesia Boulevard and is approximately 125,547 SF. The location of the project site is highlighted on the Google map shown in Figure 1.

Figure 1. Project Site Location

3. EXISTING SEWER PIPE SYSTEM ANALYSIS

3.1 SEWER UTILITY DATA

Compton Community College sewer utility data is referenced from the below documents. These are included in the Appendix.

1. Subsurface Utility Survey dated October 28, 2022 prepared for PCM3 by Util Locate (Appendix A).
2. Utility Survey dated March 17, 2023 by VCA Engineers Inc. (Subconsultant: Ultra Engineering Inc.) (Appendix B).
3. Topographical Survey dated March 10, 2023 by VCA Engineers Inc. (Appendix C).
4. Wet Utility and Manhole Dipping, CCTV, and Potholing dated September 22, 2023 by VCA Engineers (Subconsultant: Ultra Engineering Inc.) (Appendix D).
5. Additional Manhole Rim Elevation Surveyed on December 7, 2023 by VCA Engineers Inc. (Appendix E).
6. Utility Infrastructure - Phase 1 Set Drawings dated January 27, 2012 by S&K Engineers (Appendix F).

3.2 EXISTING SEWER PIPE MUNICIPAL CONNECTIONS

Within the vicinity of the project site there are two existing sanitary sewer main lines: **Line A** located to the east which connects to the City of Long Beach sanitary sewer system, and **Line B** located to the west which connects to the County of Los Angeles sanitary sewer system. **Line A** is comprised of a 6-inch VCP sanitary sewer line which is then upsized to an 8-inch VCP sanitary sewer line. **Line B** is comprised of an 8-inch PVC sanitary sewer line which is then upsized to a 10-inch PVC sanitary sewer line and finally upsized to a 12-inch PVC sanitary sewer line. The existing sanitary sewer system and lateral connections are shown on Figure 2.

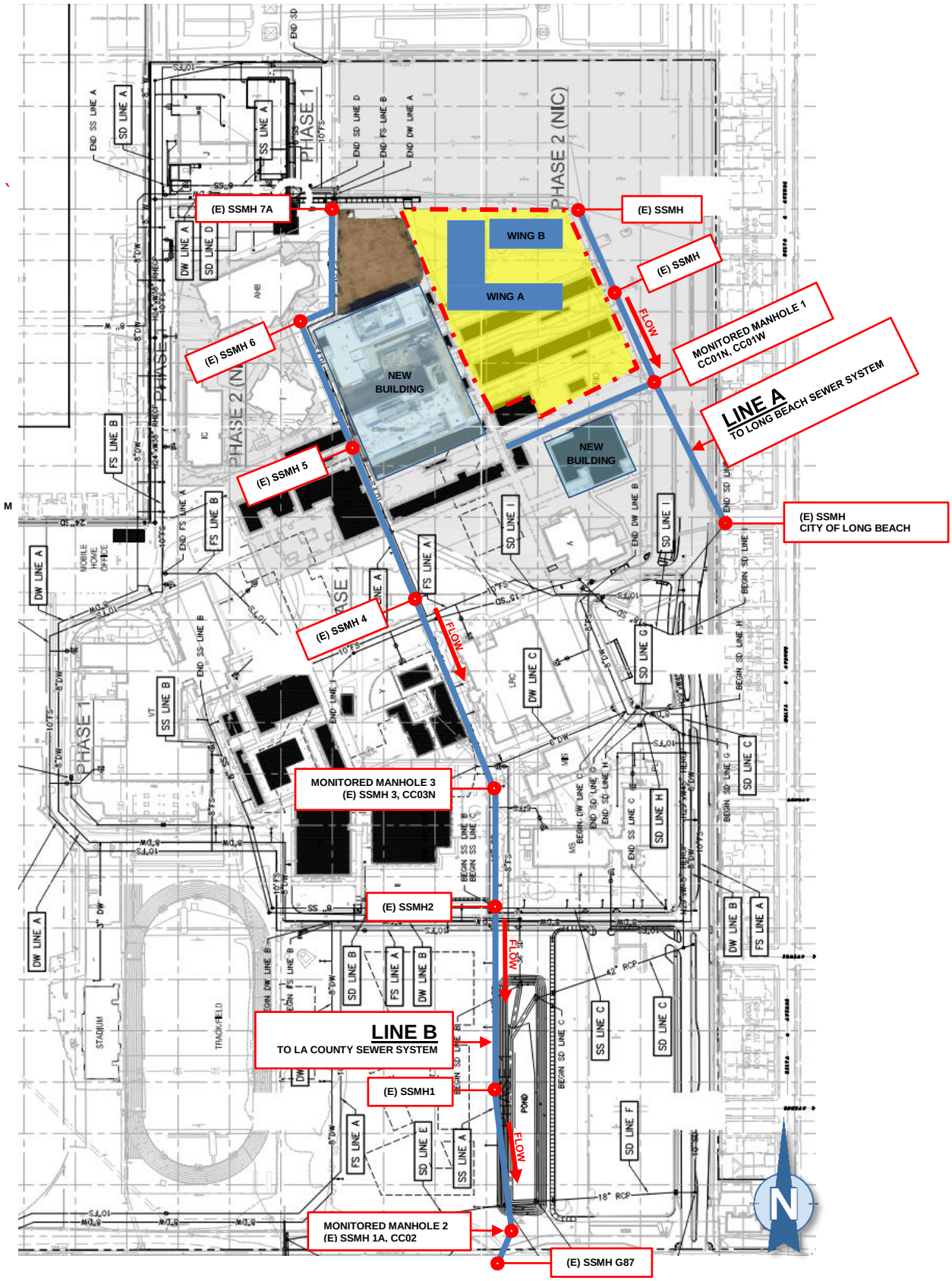

Figure 2: Existing Sanitary System

3.3 FLOW MONITORING

Two flow monitoring studies were conducted by ADS Environmental Services to analyze the existing flows at the downstream manholes before their discharge to the municipal sanitary sewer system.

A flow monitoring is typically performed for collecting data of flow at 5-minute intervals throughout the monitoring period. This approach will quantify wastewater flow monitoring at different locations for a study period. This monitoring data will determine the flow rate per day including the minimum, maximum and the average flow. The analysis of data will be used to accumulate the total flow ($Q_{P)}$ for the total monitoring period.

A 7-day flow monitoring study was conducted on Line A during Monday, 3rd of April 2023 to Monday, 10th of April 2023 on two distinct manholes. Two observations were conducted at Manhole CC01, the last campus sewer manhole before wastewater is discharged to the manhole owned by City of Long Beach. These observations were named as CC01N (At 8-inch pipe inlet) and CC01W (At 6-inch pipe inlet). One observation was conducted at Manhole CC02, the last campus manhole before wastewater is discharge to the manhole owned by County of Los Angeles. This observation was named CCO2 (At 12-inch pipe inlet). Appendix H shows the results of this study.

A 14-day flow monitoring study was conducted on Line B during Thursday, 19th of October 2023 to Wednesday, 1st November 2023 on two distinct manholes. The monitoring date was intended to ensure school had started and student activities were engaged. Two observations were conducted at this discharge location. One observations was conducted at Manhole CC02 (At 12-inch pipe inlet), the last campus manhole before wastewater is discharged to the manhole owned by County of Los Angeles. Another observation was conducted at Manhole CC03, sewer manhole located in the middle of campus which ultimately discharges into CC02. This observations was named CC03N (At 10-inch pipe inlet). Appendix I shows the results of this study.

3.4 MONITORED FLOW RATE (Q_M) – EXISITNG DEMAND

Table 1 below provides a summary of the sewer flow monitoring and observed flow conditions. To provide a more conservative value, the monitored peak flowrate of the sewer line (Q_P) in question is increased with a peaking factor of 2.5. This factored peak flowrate ($Q_M = 2.5 \times Q_P$) will become the total existing current demand.

Table 1. Observed Flow Conditions Summary

OBSERVED FLOW CONDITIONS							
Determination of Flow Peak Flow	**Factors**	**Units**	**7 days**			**14 days**	
			LINE A		**LINE B**	**LINE B**	
			CC01N	**CC01W**	**CC02**	**CC02**	**CC03N**
Monitored Peak Flow	**Q_P**	MGD	0	0.011	0.023	0.105	0.057
		cfs	0	0.017	0.036	0.162	0.088
Factored Peak Flow (Monitored Peak Flow*2.5)	**Q_M**	MGD	0	0.028	0.058	0.263	0.143
		cfs	0	0.043	0.089	0.406	0.220

See Figure 2 for locations of Line A, Line B and the Monitored Manholes.

3.5 EXISTING PIPE CAPACITY (Q_C)

Presently, there are two (2) existing sanitary on-site sewer main lines in placed within the vicinity of the project site. The proposed sanitary sewer lines will be connecting into these existing sanitary on-site sewer main lines located on the east and west side of the project site.

An existing 6-inch sanitary sewer line begins at the manhole north of the project site and runs 180' to the southeast before connecting to an existing manhole, immediately east of Wing A. From there, the sewer line converts into an 8-inch and continues to run southeast for approximately 480' at existing manhole CC01 before finally connecting to the manhole owned by City of Long Beach. This existing main line is being identified as Line A.

The calculated pipe capacity (Q_C) of the existing 6-inch pipe is 0.22 cfs, using a roughness coefficient of 0.013 and a slope of 0.64% at half full depth. The calculated pipe capacity (Q_C) of the existing 8-inch pipe is 0.44 cfs, using a roughness coefficient of 0.013 and a slope of 0.54% at half full depth.

The existing manhole SSMH 7A is the start of Line B. Upstream of SSMH 7A, there is a sewer ejector. The existing sanitary sewer line connecting the sewer ejector to SSMH 7A is a 4-inch PVC pipe. The inlet pipe of the sewer ejector is a gravity 6-inch PVC pipe. Downstream of SSMH 7A is an 8-inch line which runs south then turns to be discharged to SSMH 6. South of SSMH 6 is a 10-inch that runs 180' to the southeast and connects to

an existing sewer manhole SSMH 3 (CC03N). South of SSMH 3 is a 10-inch pipe that runs 234' south and connects to an existing sewer manhole SSMH 2. South of SSMH 2 is a 12-inch pipe that runs 628' into SSMH 1A (CC02). Downstream of SSMH 1A is a 12-inch line which runs southwest and discharges to LA County owned SSMH G87. See Appendix G for Line B As-built Profile.

The existing pipe capacity (Q_C) at the 6-inch line upstream from sewer ejector is calculated as 0.21 cfs with a roughness coefficient of 0.013 and slope of 0.58% at half full depth. The capacity of the 6-inch line will also be used as the demand since data on the actual demand is unknown at this time. The 8-inch pipe, connected from SSMH 7A to SSMH 6, is calculated to a pipe capacity (Q_C) of 0.46 cfs with a roughness coefficient of 0.013 and a slope of 0.58% at half full depth. The 10-inch line, connected from SSMH 6 to SSMH 2, is calculated to a pipe capacity (Q_C) of 0.69 cfs with a roughness coefficient of 0.013 and a slope of 0.40% at half full depth. Lastly, the 12-inch pipe line, connected from SSMH 2 to the County connection, is calculated to a pipe capacity (Q_C) of 1.13 cfs with a roughness coefficient of 0.013 and a slope of 0.40% at half full depth.

The existing pipe capacity should be determined to know if it is adequate to support the new total demand flow (Q_N). Existing parameters should be given in order to determine the flow rate of the existing pipe (Q_C). Existing parameters to consider are the following:

- Monitored Peak Flowrate (Q_P)
- Factored Peak Flowrate (Q_M)
- Diameter of existing pipe (D)
- Manning's Roughness Coefficient (n) = 0.013
- Slope of the Existing Pipe (S)
- Depth of Flow (d)
- Proportional Depth of Flow (d/D)
- Velocity of flow (v)

Calculations of the existing pipe capacity will determine if the existing pipe can support the new total demand of the proposed structures and if the waste flow can discharge at a proportional depth of flow of (d/D = 50% to 75%) per LA County Standard S-C4 as shown in Appendix M.

Refer to Appendix J for the calculations of the existing pipe capacity (Q_C) and *Figure 2* for the location of the existing sewer main lines and manholes.

4. NEW SANITARY SEWER SYSTEM ANALYSIS

4.1 NEW SEWER CONNECTIONS

The project site will consist of two (2) proposed buildings, Wing A and Wing B. Wing A is an L-Shaped, long leg horizontal structure situated at the Northwest and South portion of the project site. Wing B is a rectangular shaped structure located at the Northeast side of the project site, just north of Wing A.

Wing A will have four proposed point of connections being on the north side of the long leg side of the L-shaped building. The point of connection POC A will pick up 219.5 domestic fixture units, which will generate 69 GPM or 0.154 cfs while POC B will pick up 225 domestic fixture units, which will generate 70 GPM or 0.156 cfs. Furthermore, the point of connection POC C will pick up 2 domestic fixture units, which will generate 1 GPM or 0.002 cfs and the point of connection POC D will pick up 242 domestic fixture units, which will generate 74 GPM or 0.165 cfs.

Wing B will have one proposed point of connection POC E on the north side of the building. This POC will pick up 421.5 domestic fixture units, which will generate 108 GPM or 0.241 cfs. See Figure 3 for the points of connection.

4.2 LATERAL PIPE SIZES

Proposed sanitary sewer lines were sized to handle the new demand flow. All four proposed sanitary sewer laterals connecting POC A, B, C, D, and E to the trunk lines will be sized to a minimum 6-inch pipe. (See Appendix K for Proposed Sewer Pipe Capacity Calculations).

Wing A is composed of four lateral connections, the POC A, B, C, and D. The total flow from Wing A will be equal to 688.5 domestic fixture units and will generate 214 GPM which is equal to 0.477 cfs.

Wing B is composed of one lateral connection POC E. The POC E consists of 421.5 domestic fixture units and will generate 108 GPM which is equal to 0.241 cfs.

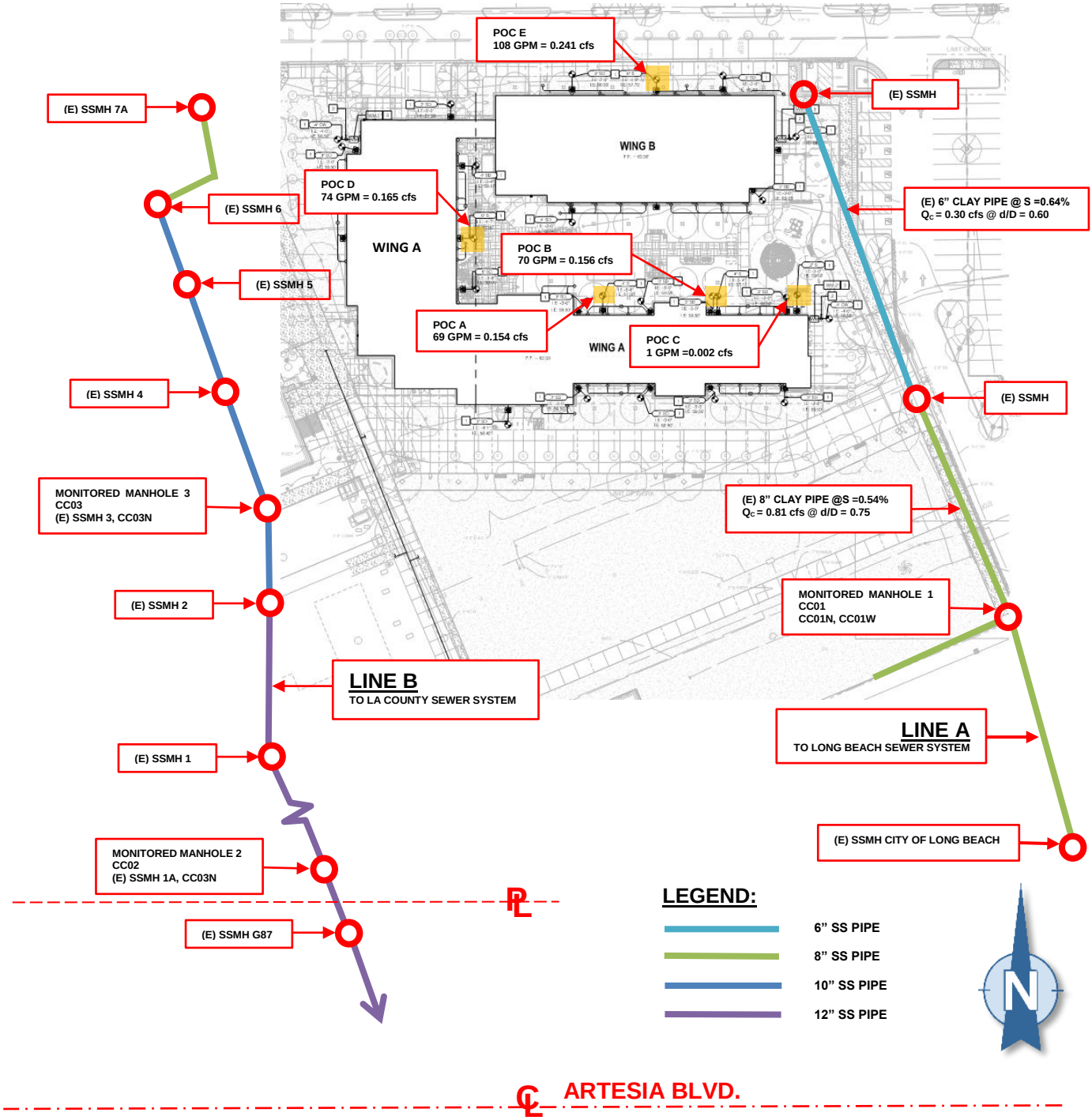

Figure 3: Point of Connections

5. SCENARIO ANALYSIS FOR TOTAL DEMAND FLOW (Q_T)

The Post Development Flow downstream of the project site was determined by adding the monitored existing maximum flow (with the peaking factor applied, Q_M) and the peak flow generated by the proposed development (Q_N). Three connection analyses were identified:

ANALYSIS 1: BOTH WING A AND WING B TO CONNECT LINE A

SEWER DEMAND

EXISTING DEMAND

Factored Peak Flowrate (Q_M) @ CC01N = 0.00 cfs
Factored Peak Flowrate (Q_M) @ CC01W = 0.043 cfs

FUTURE DEMAND

WING A = 0.154 cfs + 0.156 cfs + 0.002 cfs + 0.165 cfs
= 0.477 cfs
WING B = 0.241 cfs
Total Project Demand **(Q_T)** = 0.477 cfs + 0.241 cfs = 0.718 cfs

TOTAL SEWER DEMAND (Q_T) = 0.00 cfs + 0.043 cfs + 0.718 cfs = 0.761 cfs

LINE A – EXISTING SEWER CAPACITY

6-inch Pipe Capacity @ d/D = 0.50 and S = 0.64% = 0.22 cfs
6-inch Pipe Capacity @ d/D = 0.60 and S = 0.64% = 0.30 cfs
8-inch Pipe Capacity @ d/D = 0.50 and S = 0.54% = 0.44 cfs
8-inch Pipe Capacity @ d/D = 0.75 and S = 0.54% = 0.81 cfs

COMPARISONS

Wing B Future Demand = 0.241 cfs < 6-inch pipe capacity = 0.30 cfs @ d/D = 0.60

Wing A Future Demand = 0.477 cfs < 8-inch pipe capacity = 0.60 cfs @ d/D = 0.60

Q_T = 0.761 cfs < 8-inch pipe capacity = 0.81 cfs @ d/D = 0.75

OBSERVATIONS

1. Wing B future demand is less than the existing 6-inch pipe capacity at d/D = 0.60; (0.241 cfs < 0.30 cfs).
2. Total project demand Q_T (0.761 cfs) is less than the capacity of the existing 8-inch pipe at d/D = 0.75 (0.81 cfs).
3. Capacity of the City of Long Beach Sewer line was not calculated as existing elevations, pipe length, slope and sizes are required to confirm capacity.

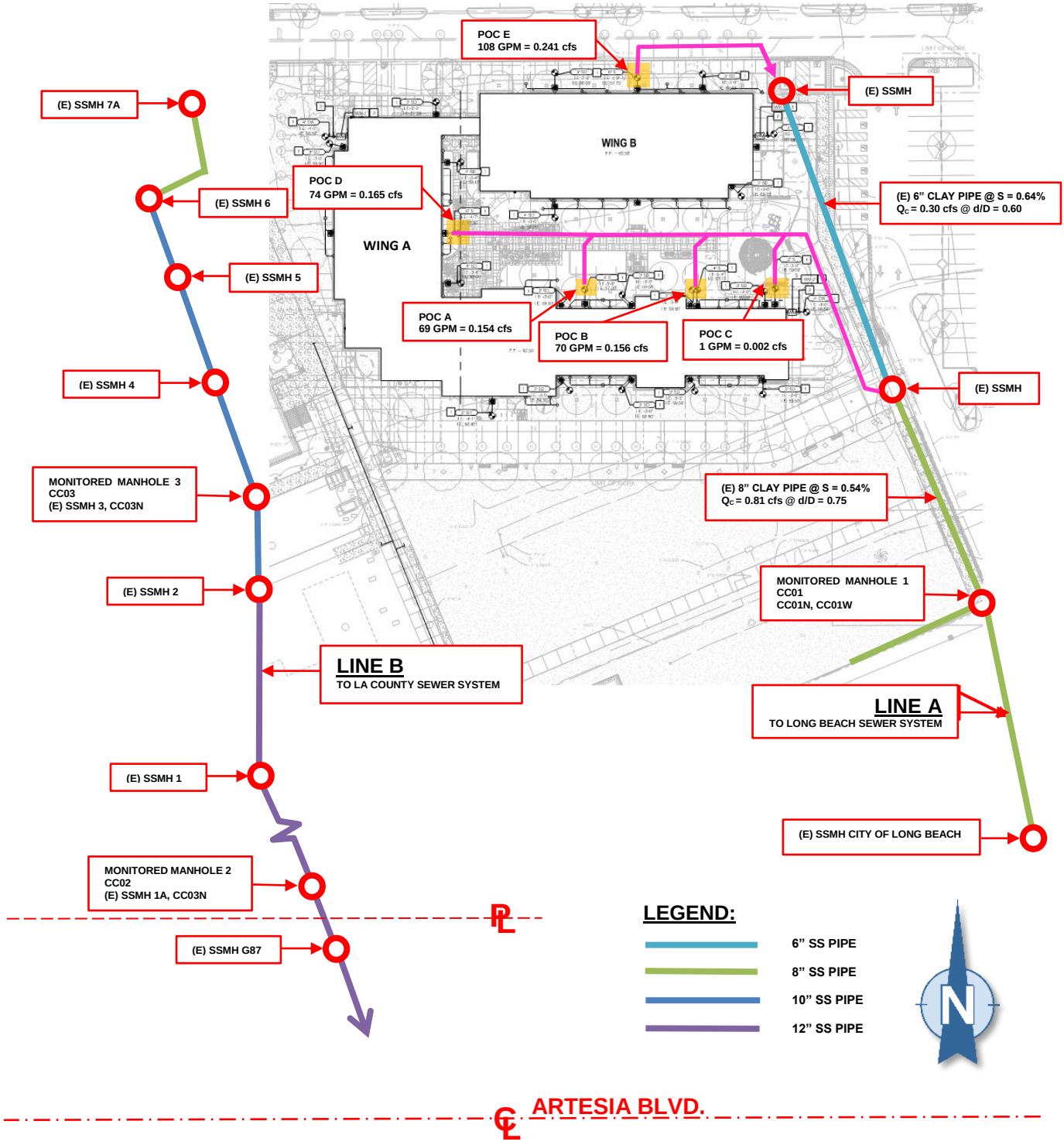

Figure 4: Scenario Analysis 1 Sewer System

ANALYSIS 2: WING B CONNECT TO LINE B AND WING A CONNECT TO LINE A

SEWER DEMAND

A. WING A TO LINE A

EXISTING DEMAND

Factored Peak Flowrate (Q_M) @ CCO1N = 0.00 cfs
Factored Peak Flowrate (Q_M) @ CCO1W = 0.043 cfs

FUTURE DEMAND (Q_N)

WING A = 0.154 cfs + 0.156 cfs + 0.002 + 0.165 cfs = 0.477 cfs

TOTAL SEWER DEMAND (Q_T) = 0.00 cfs + 0.043 cfs + 0.477 cfs = 0.52 cfs

LINE A – EXISTING SEWER CAPACITY

8-inch Pipe Capacity @ d/D = 0.50 and S = 0.54% = 0.44 cfs
8-inch Pipe Capacity @ d/D = 0.60 and S = 0.54% = 0.60 cfs

COMPARISONS

Wing A Future Demand = 0.477 cfs < 8-inch pipe capacity @ d/D = 0.60 = 0.60 cfs

Q_T = 0.52 cfs < 8-inch pipe capacity @ d/D = 0.60 = 0.60 cfs

B. WING B TO LINE B

EXISTING DEMAND

6-inch Pipe Upstream Sewer Ejector = 0.21 cfs (Based on 6-inch pipe capacity)
Factored Peak Flowrate (Q_M) @ CCO2 = 0.41 cfs

FUTURE DEMAND

WING B = 0.241 cfs

TOTAL SEWER DEMAND (Q_T)

At SSMH 7A = 0.21 cfs + 0.241 cfs = 0.451 cfs
Downstream to LA County Sewer System = 0.41 cfs + 0.451 cfs = 0.861 cfs

LINE B – EXISTING SEWER CAPACITY

6-inch Pipe Capacity @ d/D = 0.50 and S = 0.58% = 0.21 cfs
8-inch Pipe Capacity @ d/D = 0.50 and S = 0.58% = 0.46 cfs
12-inch Pipe Capacity @ d/D = 0.50 and S = 0.40% = 1.13 cfs

LINE B – NEW SEWER CAPACITY

8-inch Pipe Capacity @ d/D = 0.50 and S = 0.50% = 0.51 cfs

COMPARISONS

Wing B future demand = 0.241 cfs < New 8-inch pipe capcity = 0.51 cfs @ d/D = 0.50

Q_T at SSMH 7A = 0.451 cfs < 8-inch pipe capacity = 0.46 cfs @ d/D = 0.50

Q_T at LA County Sewer System = 0.861 cfs < 12-inch pipe capacity = 1.13 cfs @ d/D = 0.50

OBSERVATIONS

WING A TO LINE A

1. Wing A future demand is less than the existing 8-inch pipe capacity at d/D = 0.60; (0.477 cfs < 0.60 cfs).
2. Total project demand Q_T (0.52 cfs) is less than the capacity of the existing 8-inch pipe capacity at d/D = 0.60 (0.60 cfs).

WING B TO LINE B

1. Wing B future demand is less that the new 8-inch pipe capacity at d/D = 0.50; (0.241 cfs < 0.51 cfs).
2. Total demand Q_T to SSMH 7A (0.451 cfs) is less that the existing 8-inch pipe capacity at d/D = 0.50 (0.46 cfs).
3. Total demand Q_T to LA County Sewer System (0.861 cfs) is less than the existing 12-inch pipe capacity at d/D = 0.50 (1.13 cfs).
4. If Line B will serve Wing B only, then Line B is adequate to support the total sewer demand and still have a net future available capacity of 0.269 cfs (1.13 cfs – 0.861 cfs or 121 GPM) for any future connections through 12-inch line.

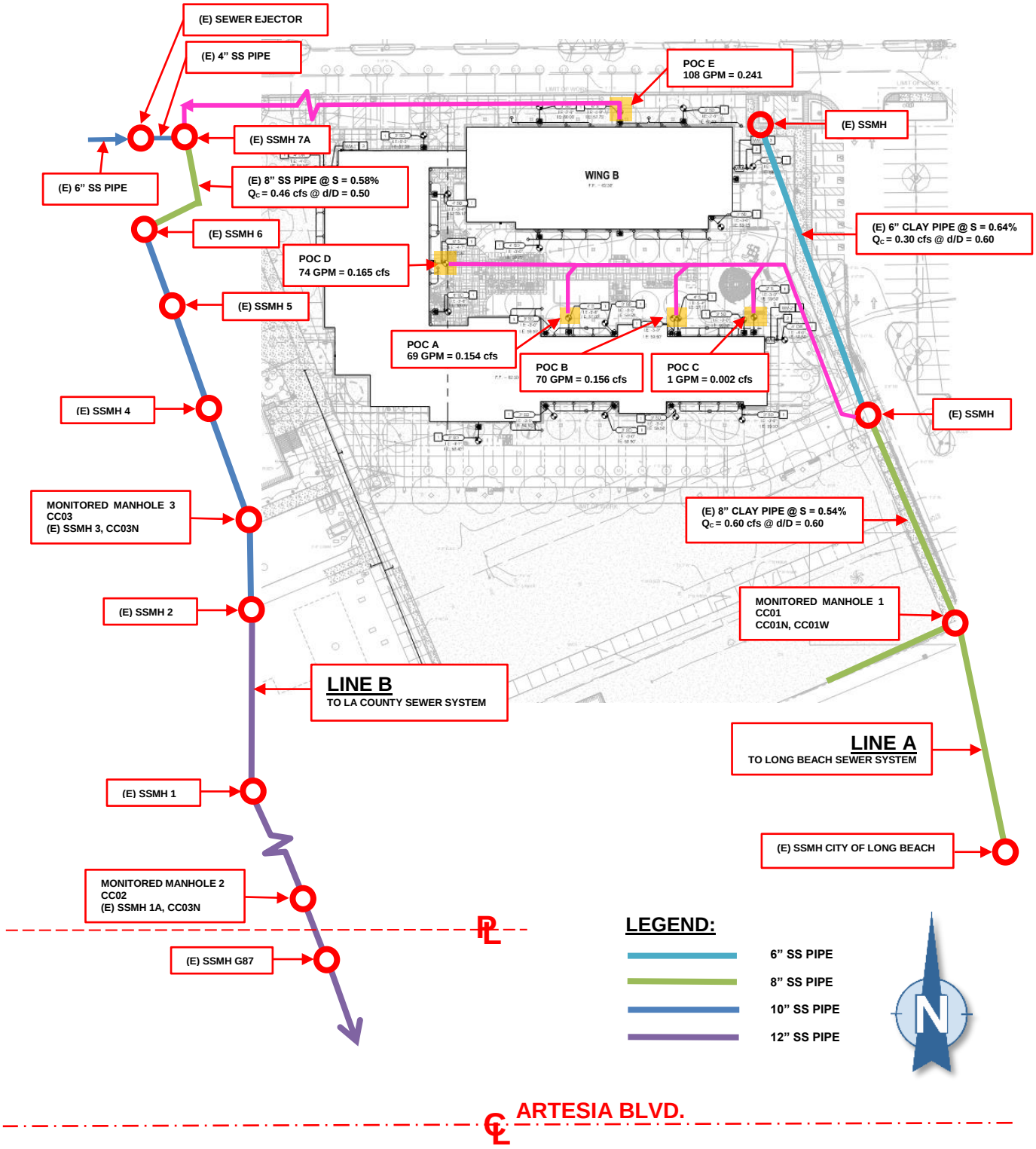

Figure 5: Scenario Analysis 2 Sewer System

ANALYSIS 3: WING A AND WING B TO CONNECT TO SSMH 7A

SEWER DEMAND

WING A AND B TO LINE B

EXISTING DEMAND

6-inch Pipe Upstream Sewer Ejector = 0.21 cfs (based on 6-inch pipe capacity)
Factored Peak Flowrate (Q_M) @ CCO2 = 0.41 cfs

FUTURE DEMAND

WING A = 0.477 cfs
WING B = 0.241 cfs

Total Future Demand = 0.477 cfs + 0.241 cfs = 0.718 cfs

TOTAL SEWER DEMAND (Q_T)

At SSMH 7A = 0.21 cfs + 0.718 cfs = 0.928 cfs
Downstream to LA County Sewer System = 0.41 cfs + 0.928 cfs = 1.338 cfs
0.92

LINE B – EXISTING SEWER CAPACITY

6-inch Pipe Capacity @ d/D = 0.50 and S = 0.58% = 0.21 cfs
8-inch Pipe Capacity @ d/D = 0.50 and S = 0.58% = 0.46 cfs
12-inch Pipe Capacity @ d/D = 0.50 and S = 0.40% = 1.13 cfs
12-inch Pipe Capacity @ d/D = 0.60 and S = 0.40% = 1.52 cfs

LINE B – NEW SEWER CAPACITY

8-inch Pipe Capacity @ d/D = 0.50 and S = 0.50% = 0.51 cfs
10-inch Pipe Capacity @ d/D = 0.50 and S = 0.50% = 0.92 cfs
10-inch Replacement Pipe Sewer Capacity @ d/D = 0.50 and S = 0.58% = 0.99 cfs

COMPARISONS

Total Future Demand = 0.718 cfs < New 10-inch pipe capacity = 0.92 cfs @ d/D = 0.50

Q_T at SSMH 7A = 0.928 cfs < 10-inch Replacement Pipe = 0.99 cfs @ d/D = 0.50

Q_T at LA County Sewer System = 1.338 cfs < 12-inch pipe capacity = 1.52 cfs @ d/D = 0.60

OBSERVATIONS

1. Wing A can be conveyed directly to SSMH7A.
2. Since there is a new building near the SSMH 6, connection directly to SSMH 6 from Wing A is not possible.
3. Since the demand in Wing A and Wing B will be conveyed as one all towards SSMH7A, a new 10-inch pipe will be required for the conveyance of the total demand of both buildings. The total demand of Wings A and B is 0.718 cfs is less than new 10-inch line capacity of 0.92 cfs.
4. Thus the existing 8-inch line will have to be replaced by a new 10-inch line between SSMH7A and SSMH6.
5. The total demand at SSMH 7A including from the ejector pump equaling 0.928 cfs is less than the capacity of 0.99 cfs of the new replacement 10-inch line.
6. Installation of the replacement 10-inch line is in the same location as the existing 8-inch line. Thus trenching will not occur thru unverified subsurface areas but through where the existing line minimizing unforeseen conditions and obstructions.
7. The total demand at LA County Sewer System including from the ejector pump equaling 1.338 cfs is less than the capacity of 1.52 cfs of the existing 12-inch line.

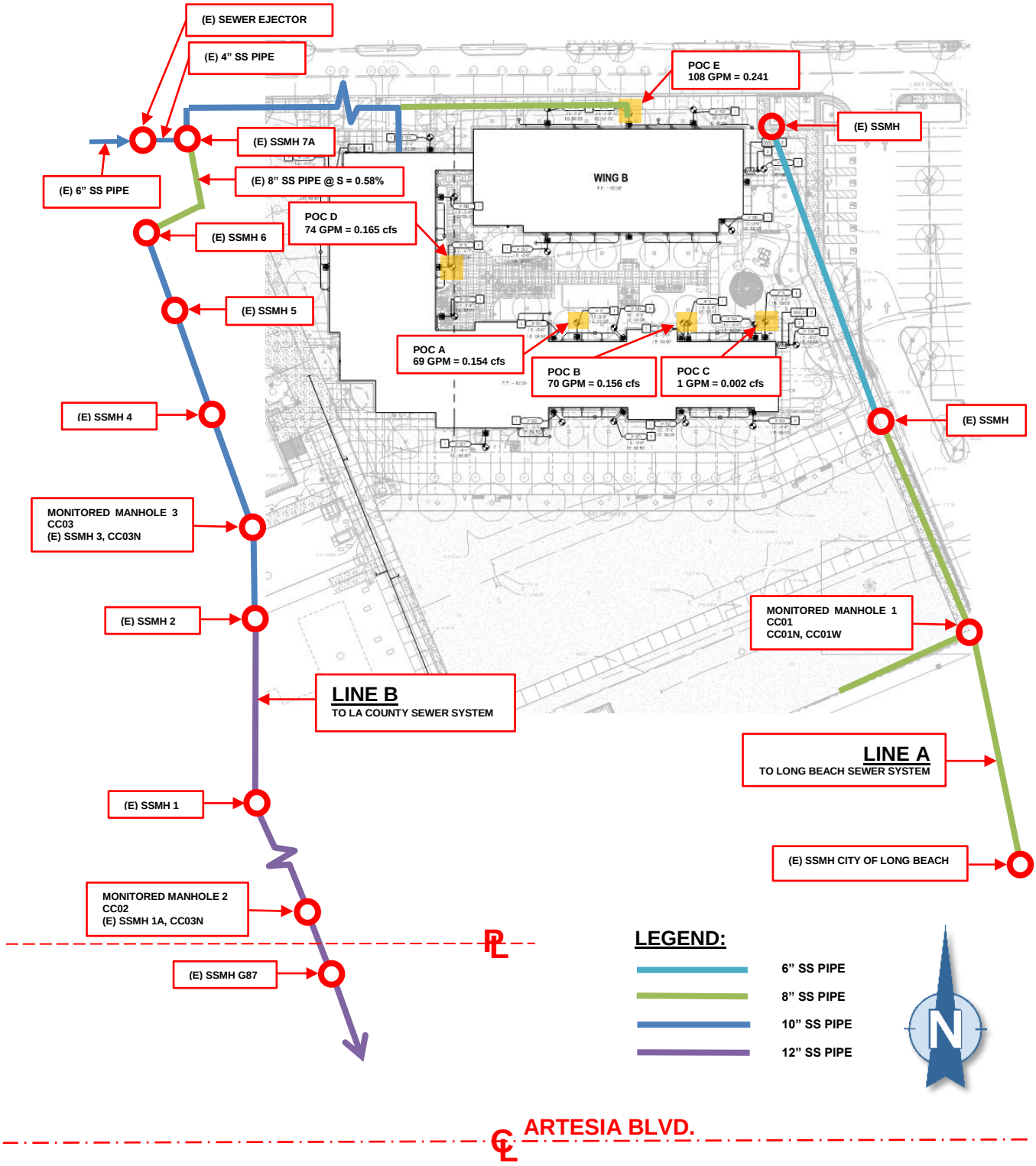

Figure 6: Scenario Analysis 3 Sewer System

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ANALYSIS 4: WING A AND WING B TO CONNECT TO SEWER EJECTOR

SEWER DEMAND

WING A AND B TO LINE B

EXISTING DEMAND

6-inch Pipe Upstream Sewer Ejector = 0.21 cfs (based on 6-inch pipe capacity)
Factored Peak Flowrate (Q_M) @ CCO2 = 0.41 cfs

FUTURE DEMAND

WING A = 0.477 cfs
WING B = 0.241 cfs

Total Future Demand = 0.477 cfs + 0.241 cfs = 0.718 cfs

TOTAL SEWER DEMAND (Q_T)

At Sewer Ejector = 0.21 cfs + 0.718 cfs = 0.928 cfs
At SSMH 7A = 0.21 cfs + 0.718 cfs = 0.928 cfs
Downstream to LA County Sewer System = 0.41 cfs + 0.928 cfs = 1.338 cfs

LINE B – EXISTING SEWER CAPACITY

6-inch Pipe Capacity @ d/D = 0.50 and S = 0.58% = 0.21 cfs
8-inch Pipe Capacity @ d/D = 0.50 and S = 0.58% = 0.46 cfs
12-inch Pipe Capacity @ d/D = 0.50 and S = 0.40% = 1.13 cfs
12-inch Pipe Capacity @ d/D = 0.60 and S = 0.40% = 1.52 cfs

LINE B – NEW SEWER CAPACITY

8-inch Pipe Capacity @ d/D = 0.50 and S = 0.50% = 0.51 cfs
10-inch Pipe Capacity @ d/D = 0.50 and S = 0.50% = 0.92 cfs
10-inch Pipe Capacity @ d/D = 0.60 and S = 0.50% = 1.23 cfs
6-inch Pipe Capacity @ d/D = 0.50 and S = 5.23% = 0.76 cfs
6-inch Pipe Capacity @ d/D = 0.60 and S = 5.23% = 1.02 cfs
10-inch Replacement Pipe Sewer Capacity @ d/D = 0.50 and S = 0.58% = 0.99 cfs

COMPARISONS

Total Future Demand = 0.718 cfs < New 10-inch pipe capacity = 0.92 cfs @ d/D = 0.50

Q_T at Sewer Ejetor = 0.928 cfs < New 10-inch pipe capacity = 1.23 cfs @ d/D = 0.60

Q_T at Sewer Ejetor = 0.928 cfs < New 6-inch pipe capacity = 1.02 cfs @ d/D = 0.60

Q_T at SSMH 7A = 0.928 cfs < 10-inch Replacement Pipe = 0.99 cfs @ d/D = 0.50

Q_T at LA County Sewer System = 1.338 cfs < 12-inch pipe capacity = 1.52 cfs @ d/D = 0.60

OBSERVATIONS

1. Since the demand in Wing A and Wing B will be conveyed as one all towards Sewer Ejector, a new 10-inch pipe will be required for the conveyance of the total demand of both buildings. The total demand of Wings A and B is 0.718 cfs is less than new 10-inch line capacity of 0.92 cfs.
2. A portion of 6-inch existing line between SSMH 7 and Sewer Ejector will be removed and replaced to meet new invert elevation, a new 10-inch line will be required to convey the total demand of both buildings and including from the 6-inch line. The total demand is 0.928 cfs is less that new 10-inch line capacity of 1.23 cfs.
3. The existing sewer pipe line after Sewer ejector pump of 4-inch pipe will be removed and replaced to 6-inch pipe to support the total demand. The total demand at demand at existing 6-inch pipe is 0.928 cfs is less than 6-inch pipe capacity of 1.02 cfs.
4. Thus the existing 8-inch line will have to be replaced by a new 10-inch line between SSMH7A and SSMH6.
5. The total demand at SSMH 7A including from the ejector pump equaling 0.928 cfs is less than the capacity of 0.99 cfs of the new replacement 10-inch line.
6. Installation of the replacement 10-inch line is in the same location as the existing 8-inch line. Thus trenching will not occur thru unverified subsurface areas but through where the existing line minimizing unforeseen conditions and obstructions.
7. The total demand at LA County Sewer System including from the ejector pump equaling 1.338 cfs is less than the capacity of 1.52 cfs of the existing 12-inch line.

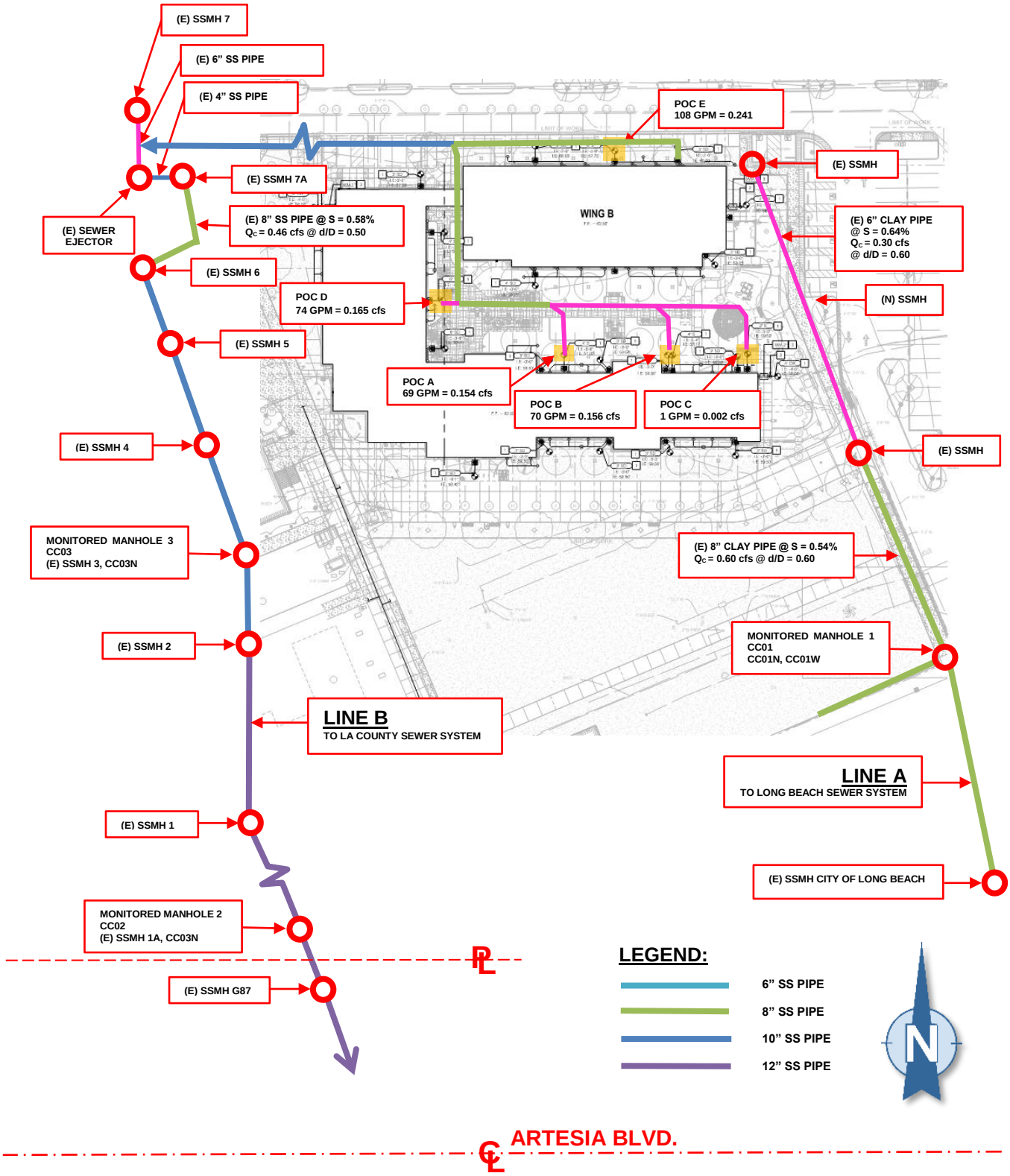

Figure 7: Scenario Analysis 4 Sewer System

6. CONCLUSION

The below conclusion is solely based on the impact of the proposed student housing building will have on the existing sanitary system. Accordingly, each scenario will be looked into and evaluated for its merits and flaws.

SCENARIO ANALYSIS 1

Merits:

- This scenario is feasible.
- Although the risk of clogging exists, it is acceptable.

Flaws:

- Demands for new, under construction and future buildings were not detected in the flow monitoring investigation and not taken into account.
- No new demand can be imposed on the existing line.

SCENARIO ANALYSIS 2

Merits:

- This is feasible.
- Existing lines will be available for new demands.
- Impact to the City and County line is the minimal.

Flaws:

- Demand for the newly constructed and under construction buildings were not included in the flow monitoring investigation. This demand was not taken into account and if added, will lessen the capacity of Line B.

SCENARIO ANALYSIS 3

Merits:

- This is feasible.

Flaws:

- Existing 8” pipe from SSMH 7A to SSMH 6 will need to be upsized to a 10-inch pipe.
- Existing 8-inch line is at capacity. No new demands can be introduced into the line.
- Demand for the newly constructed and under construction buildings were not included in the flow monitoring investigation. This demand was not taken into account and if added, will lessen the capacity of Line B.

SCENARIO ANALYSIS 4

Merits:

- This is feasible.

Flaws:

- Portion of an existing 6" pipe from SSMH 7 to Sewer ejector pump will need to be removed and upsized to a 10-inch pipe.
- Existing 8" pipe from SSMH 7A to SSMH 6 will need to be upsized to a 10-inch pipe.
- Existing 8-inch line is at capacity. No new demands can be introduced into the line.
- Demand for the newly constructed and under construction buildings were not included in the flow monitoring investigation. This demand was not taken into account and if added, will lessen the capacity of Line B.

7. RECOMMENDATION

The most viable option to be recommended is Scenario Analysis 4, which will convey the discharge of Line A and Line B as one. This approach will avoid overburdening each of the existing lines with additional sewer demands.

There are other demands that were not considered in this study. Buildings that are in construction and not yet occupied new buildings are inactive and their wastes were not detected by the flow monitoring investigation. Thus, their demands are not included and not part of the study. Demand on future buildings was also not included in the study as their demands are unknown at this time. Additional study may be required to ensure the existing lines are not overburdened because of these potential new or additional connections.

APPENDIX

The appendices attached here are the materials that was used as reference and a guide for this study.

- Appendix A: Subsurface Utility (October 28, 2022), VCA Engineers Inc. (Subconsultant: Ultra Engineering Inc.)
- Appendix B: Utility Survey (March 17, 2023), VCA Engineers Inc.
- Appendix C: Topographical Survey (March 10, 2023), VCA Engineers Inc.
- Appendix D: Wet Utility and Manhole Dipping, CCTV, and Potholing (September 22, 2023), VCA Engineers Inc. (Subconsultant: Ultra Engineering Inc.)
- Appendix E: Additional Manhole Rim Elevation Survey (December 7, 2023), VCA Engineers Inc.
- Appendix F: Utility Infrastructure-Phase 1 Set Drawings (January 27, 2012), S&K Engineers
- Appendix G: Profile of Line B
- Appendix H: 7 days Monitoring Flow Study, ADS Environmental Services
- Appendix I: 14 days Monitoring Flow Study, ADS Environmental Services
- Appendix J: Existing Sewer Pipe Capacity Calculations
- Appendix K: Total Sewer Demand
- Appendix L: New Total Demand Calculations
- Appendix M: Excerpts from LA County DPW Sanitary Sewer Procedural Manual

APPENDIX A

SUBSURFACE UTILITY

Compton Community College Sewer Map

UTIL-LOCATE SUBSURFACE UTILITY MAP

NOTE: POTHOLING IS "HIGHLY" RECOMMENDED, THE EXPOSURE OF THE UTILITY LINE WILL ACCURATELY VERIFY EXACT, DEPTH, DIRECTION, SIZE AND MATERIAL OF THE UTILITY PIPE OR LINE.
FOR AN ESTIMATE-PLEASE CALL OFFICE.

SUBSURFACE UTILITY MAP
1136 E. Valencia Dr, Fullerton, CA 92831
Toll free: 888.885.6228 Office: 714.521.5393 Cell: 714.296.9680
Email: arts@util-locate.com Web: www.util-locate.com

SUBSURFACE UTILITY MAP SYMBOLS

Symbols	Description
	MANHOLE
	GREASE INTERCEPTOR
	HANDHOLE
	SEWER / STORM DRAIN CLEAN OUT (C/O)
	COMMUNICATION DROP / GAS DROP / ELECTRICAL DROP / WATER DROP
	STANDARD & PROPERTY LIGHT / YARD LIGHT STANDARDS
	UTILITY POLE / POWER POLE
	PARKING LOT LIGHTS / STREET LIGHTS
	PIPE TURNS UP / RISER / SPIGOT
	STORM GRATE / STORM DRAIN
	CURB SIDE DRAIN
	FLOOR DRAIN
	ELECTRICAL PANEL / SERVICE BOX / COMMUNICATION PANEL
	TELEPHONE / BLUE CODE EMERGENCY PHONE
	GAS METER / WATER METER
	GAS VALVE / WATER VALVE / CONTROL VALVE
	ELECTRICAL TRANSFORMER OR PAD MOUNTED TRANSFORMER (S.P.M.T)
	ELECT. BOX / CONC BOX / VAULTS / PULL BOX / JABOX / CONTROL BOX
	FIRE HYDRANT / POST INDICATOR VALVE
	FDC (FIRE DEPARTMENT CONNECTION)
	END OF SIGNAL
	BACKFLOW PREVENTER
	UTILITY LINE CUT
	CAPPED UTILITY LINE
	POTHOLE LOCATING

ABBREVIATION		ABBREVIATION	
Abrv	Description	Abrv	Description
CV	Communication Vault	MTY	Empty
EV	Electrical Vault	W	Water Valve
NC	Non-conductive	BFP	Backflow Preventer
MH	Manhole	N/A	Not Accessible
PB	Pull Box	UNK	Unknown Indication
CNC	Can not open	UNK-G	Unknown GPR
WV	Water Valve	Cp	Copper
GV	Gas Valve	RC	Reclaim Water
DB	Direct Buried	PIV	Post Indicator Valve
PLA	Plastic (Conduit or Pipe)	JT	Joint Trench
STL	Steel	T	Trench
CI	Cast Iron	ACP	Asbestos Cement Pipe
MTL	Metal	VCP	Vitrified Clay Pipe

PREPARED FOR

PCM3

PROJECT ADDRESS

1111 E Artesia Blvd,
Compton, CA 90221

DATE	REVISION
04-18-2022	Full Map up to date
10-28-2022	Up date (Instructiona #1 , Housing)

DRAWN BY: I.M
CHECKED BY: A.S

SHEET No:
Tittle Page

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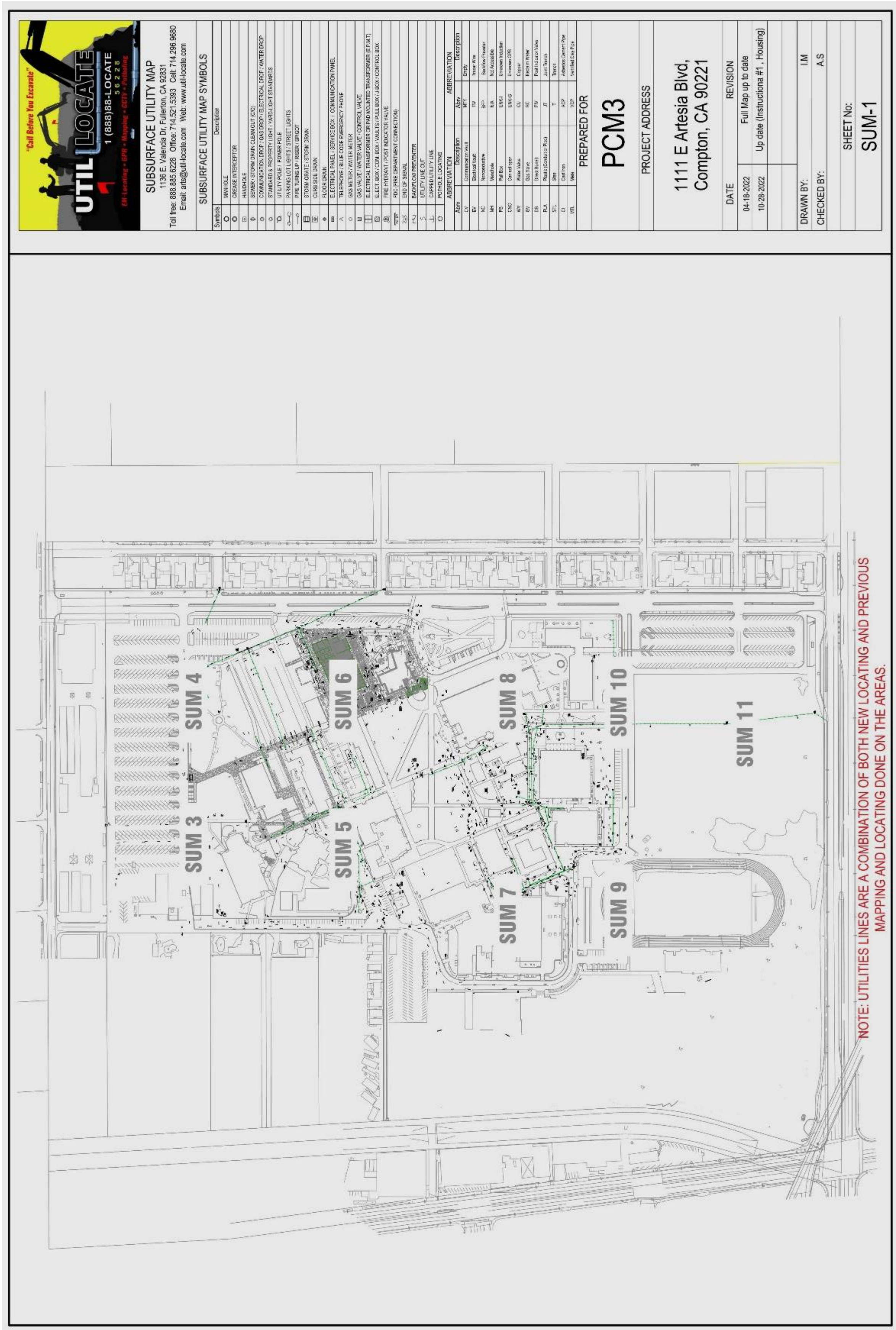

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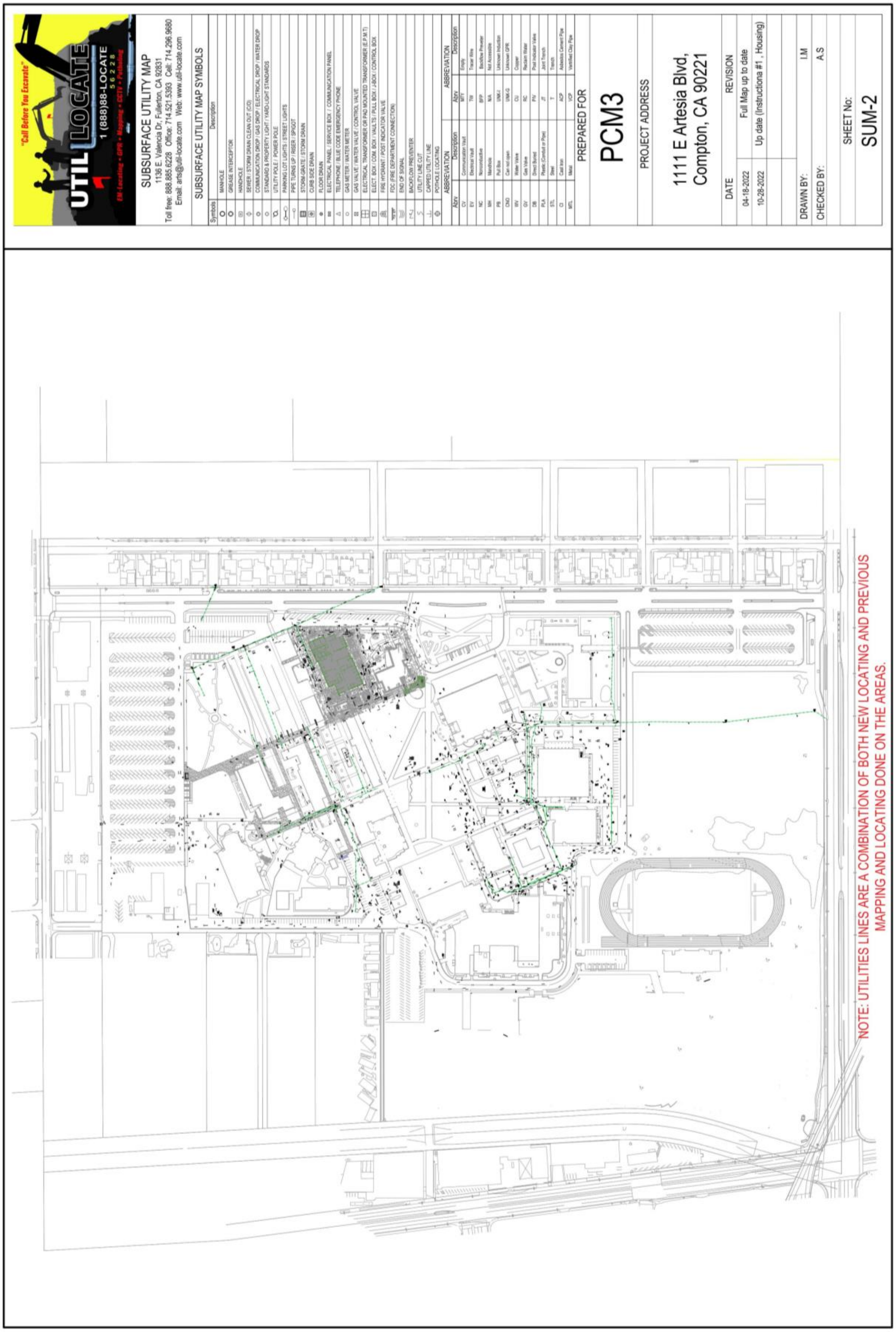

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SUBSURFACE UTILITY MAP SYMBOLS
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PCM3
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Compton, CA 90221
DATE
REVISION
04-18-2022
Full Map up to date
10-28-2022
Up date (Instructiona #1 , Housing)
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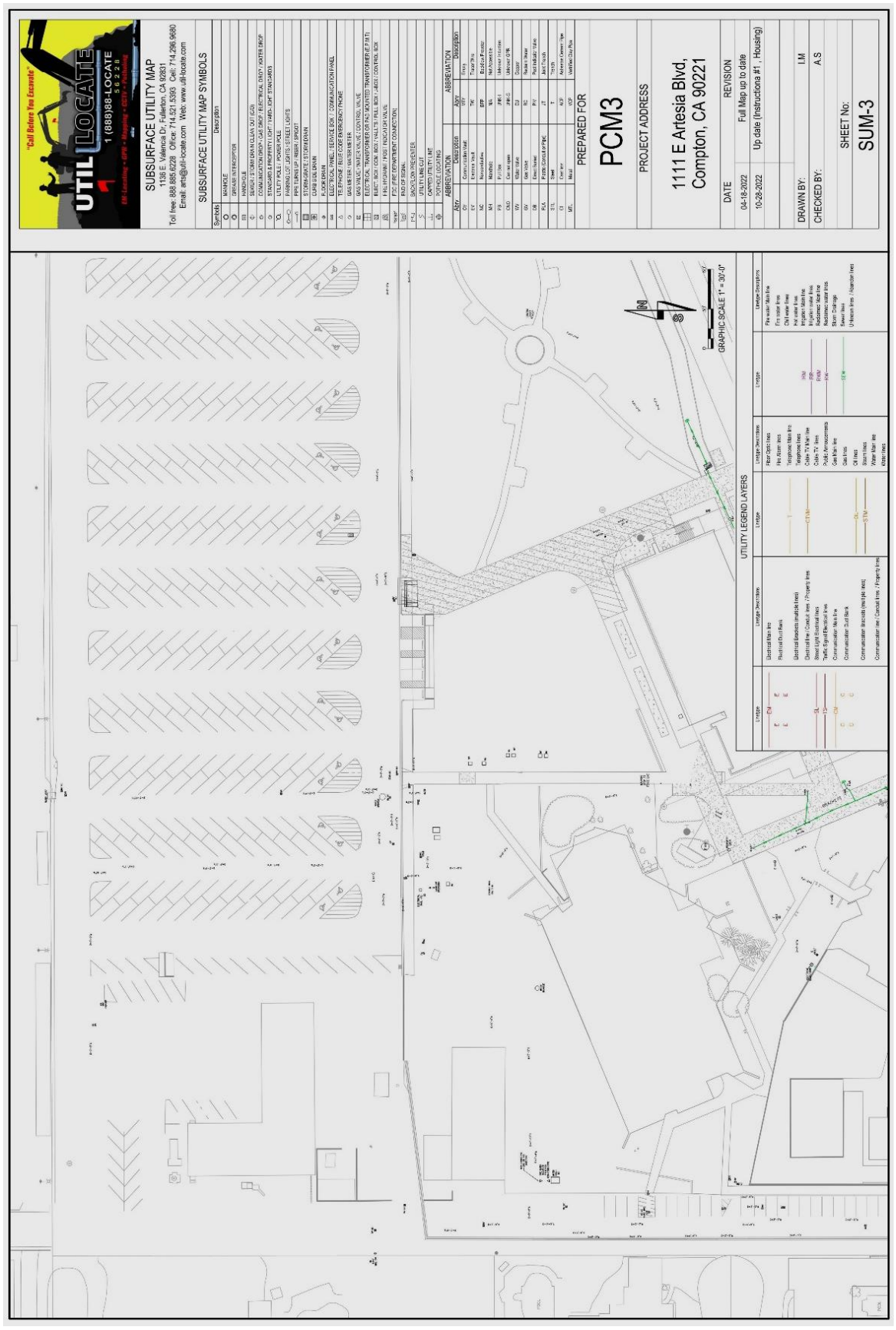
I.M
CHECKED BY:
A.S
SHEET No:
SUM-2
NOTE: UTILITIES LINES ARE A COMBINATION OF BOTH NEW LOCATING AND PREVIOUS
MAPPING AND LOCATING DONE ON THE AREAS.



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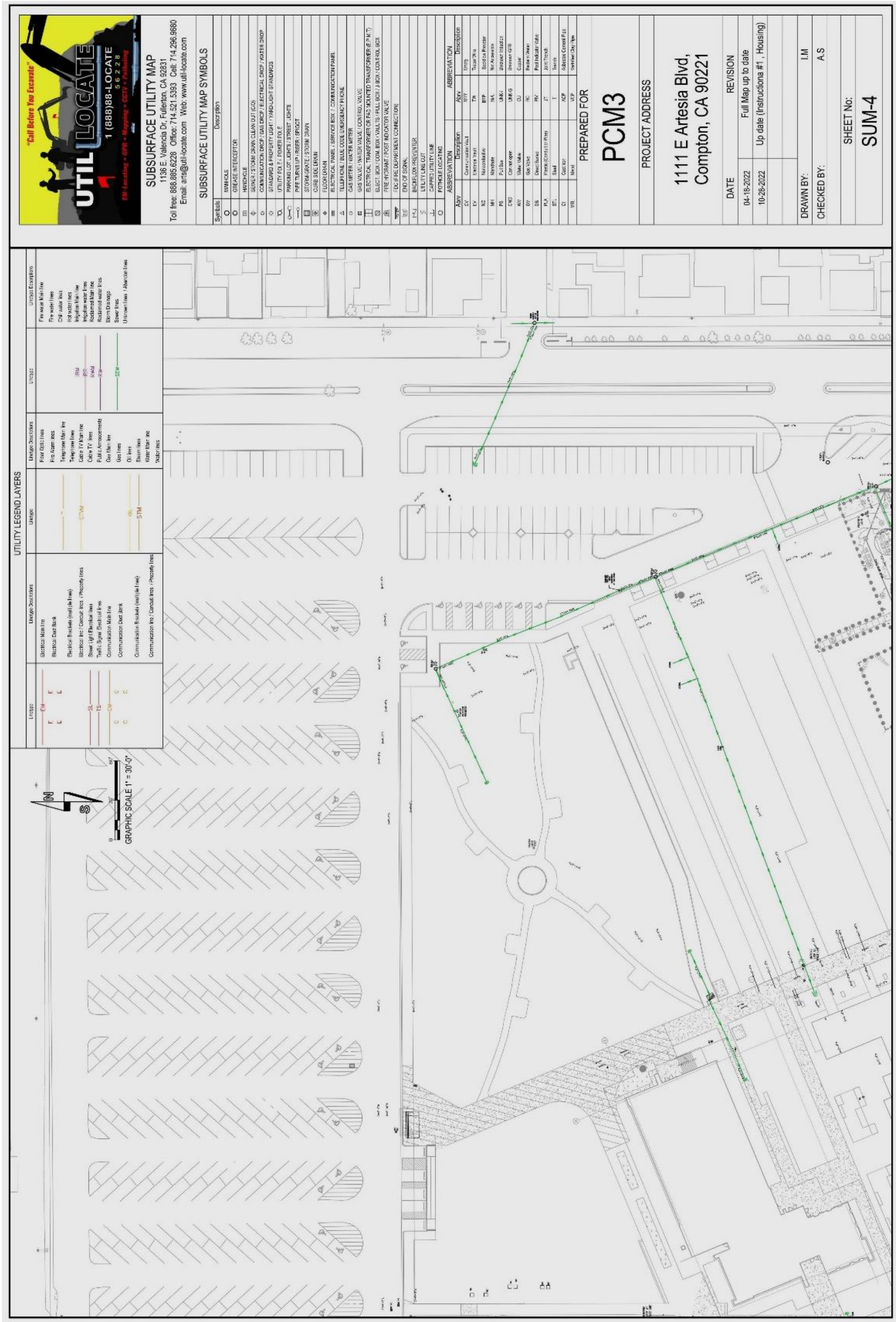

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UTILITY LEGEND LAYERS
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DATE
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SHEET No:
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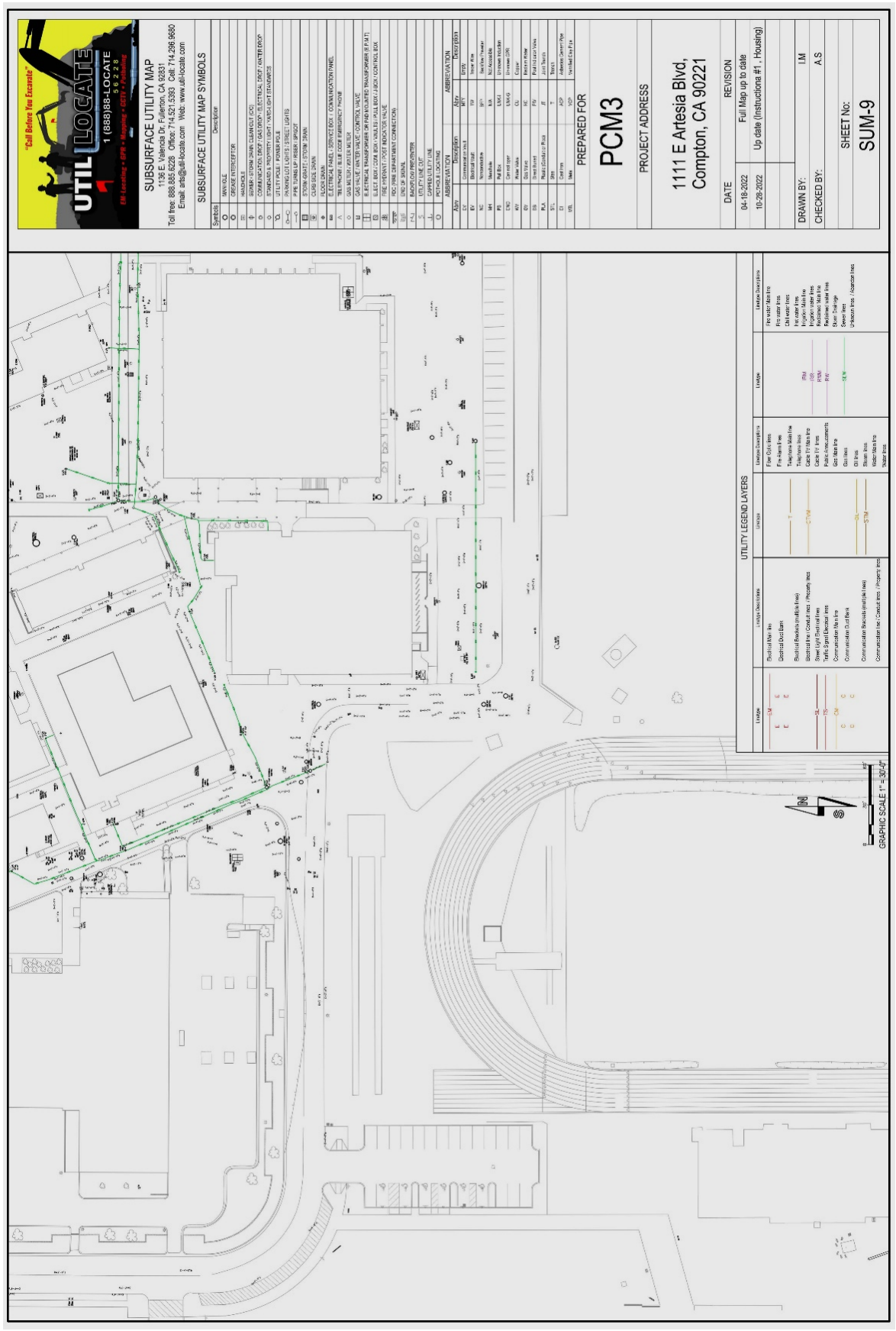

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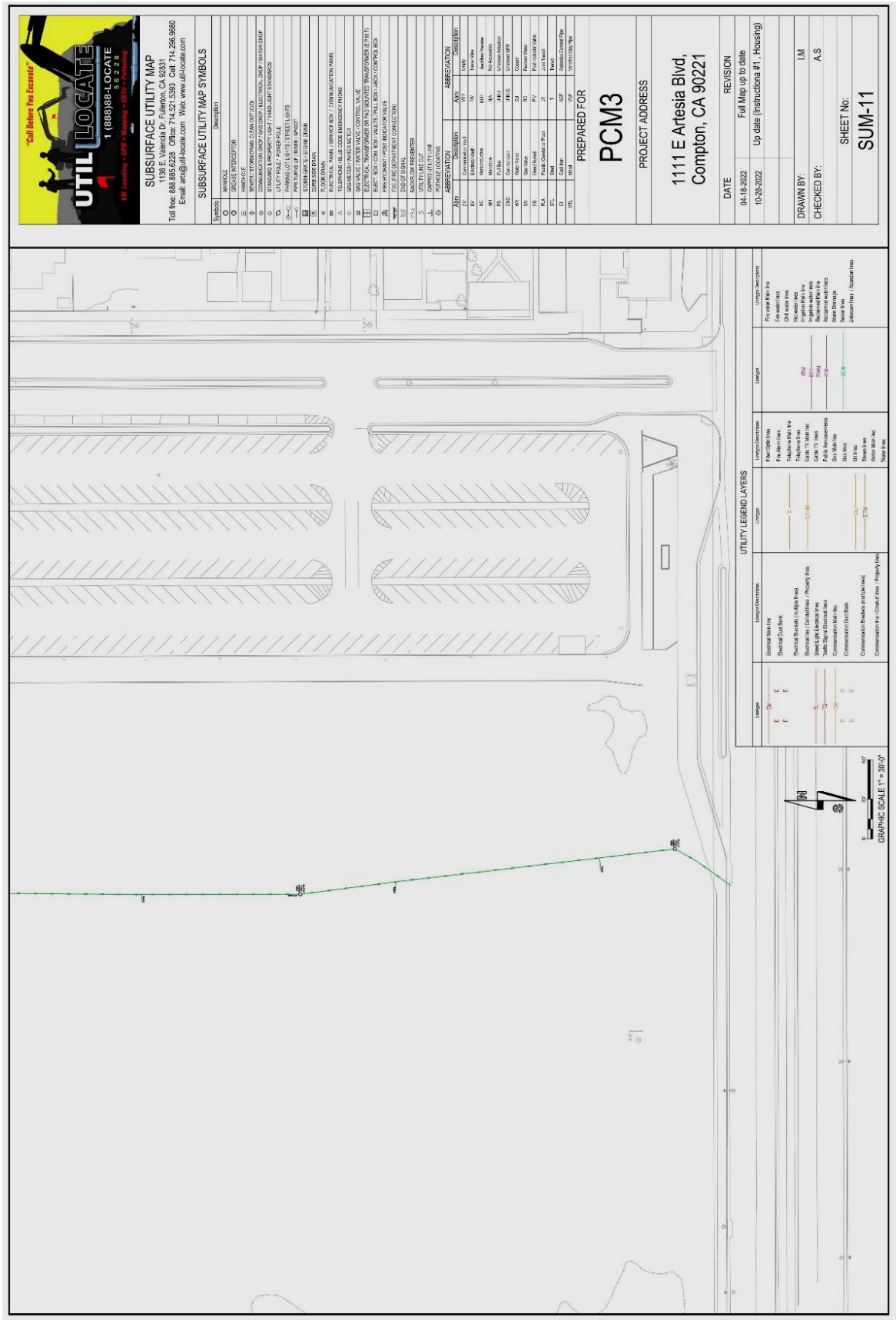

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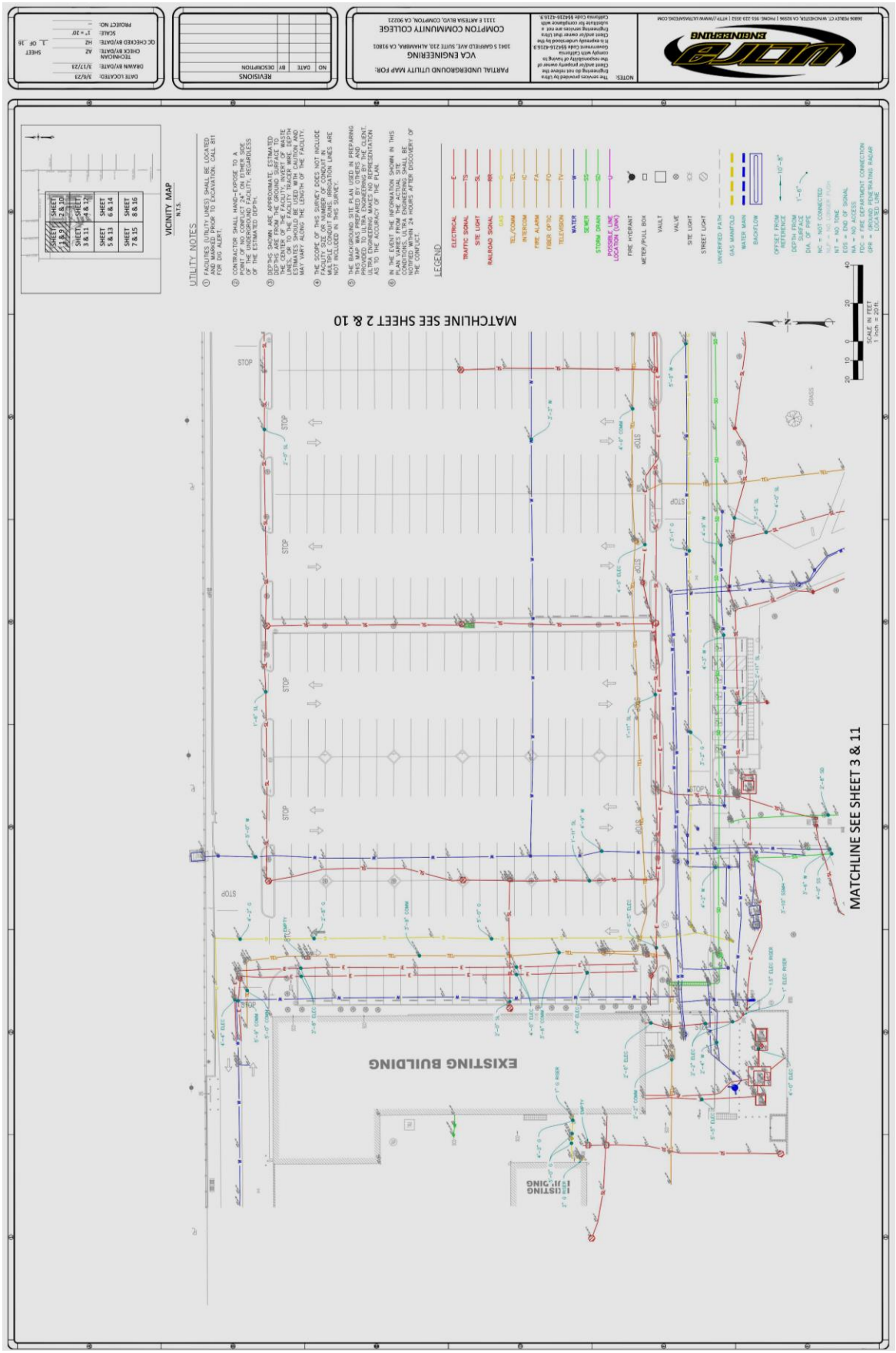
APPENDIX B

UTILITY SURVEY



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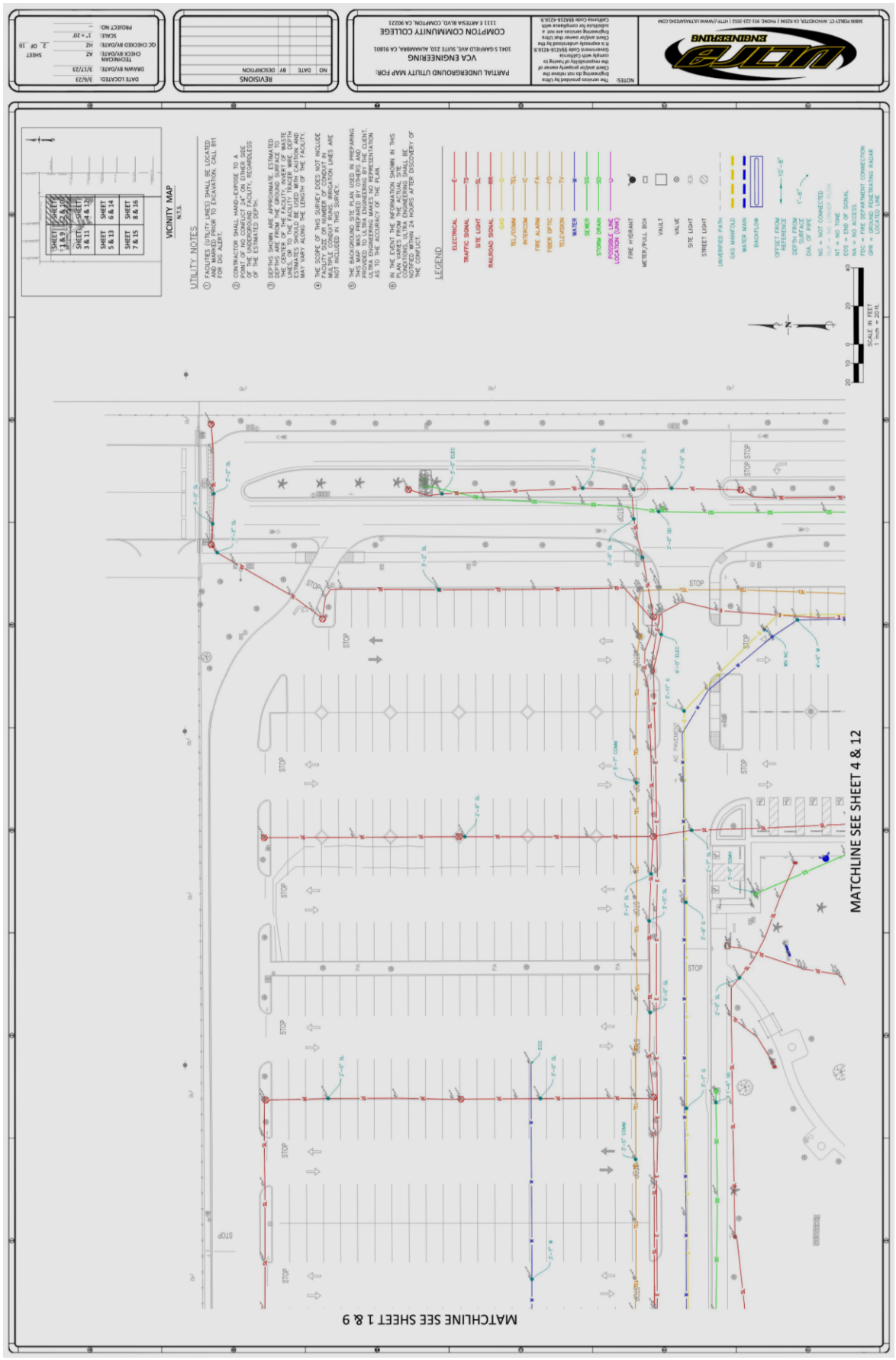

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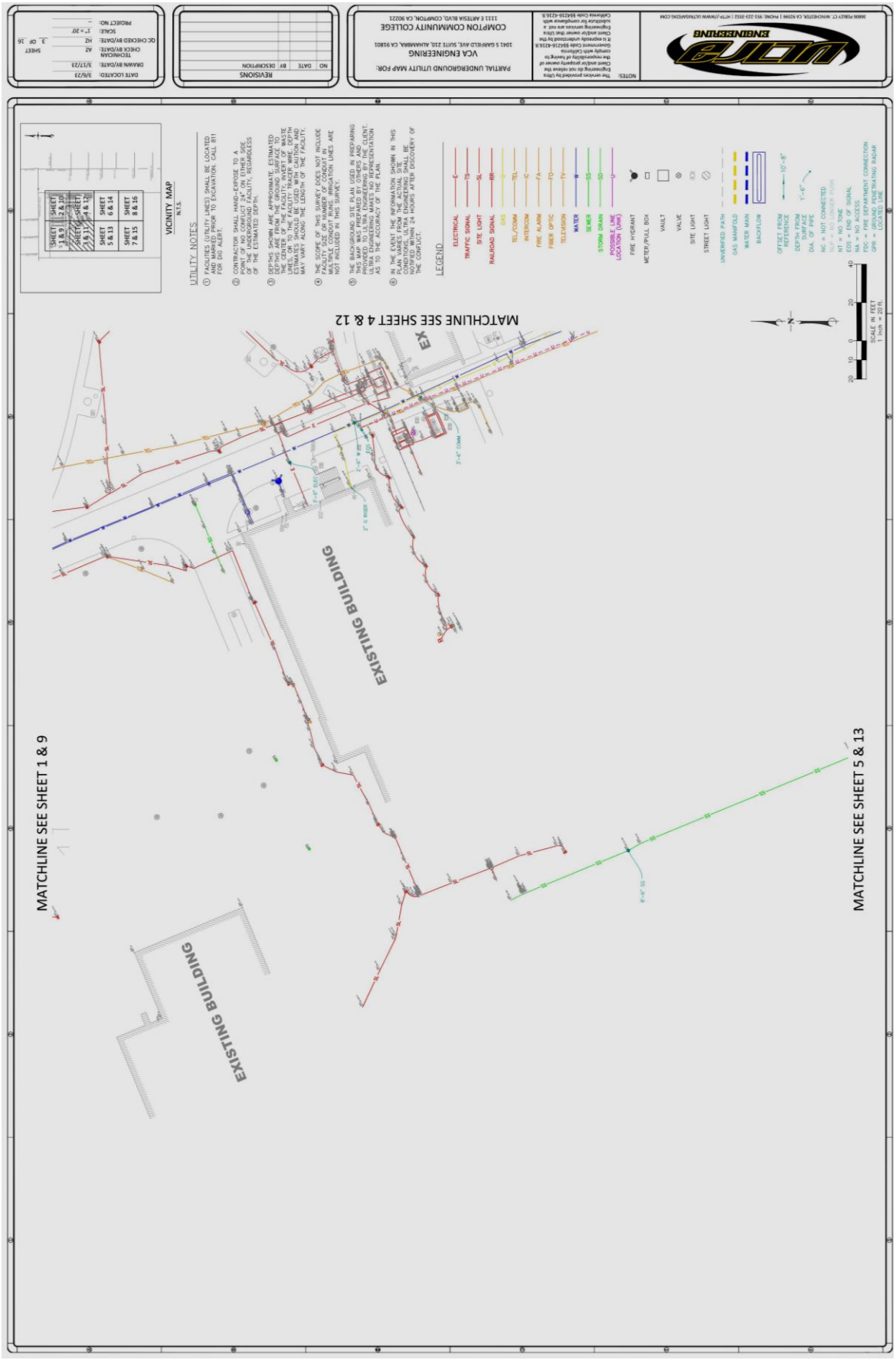

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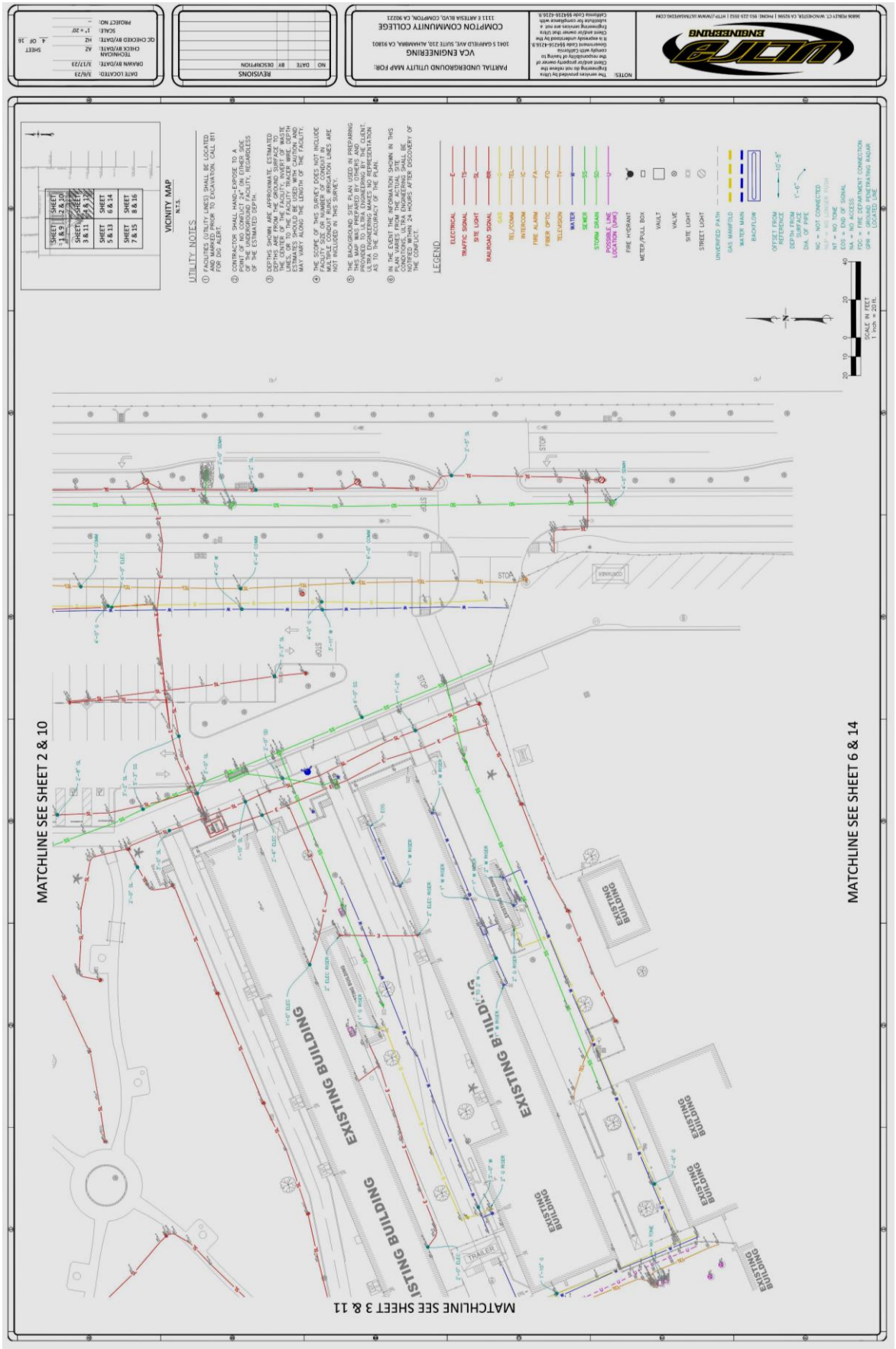

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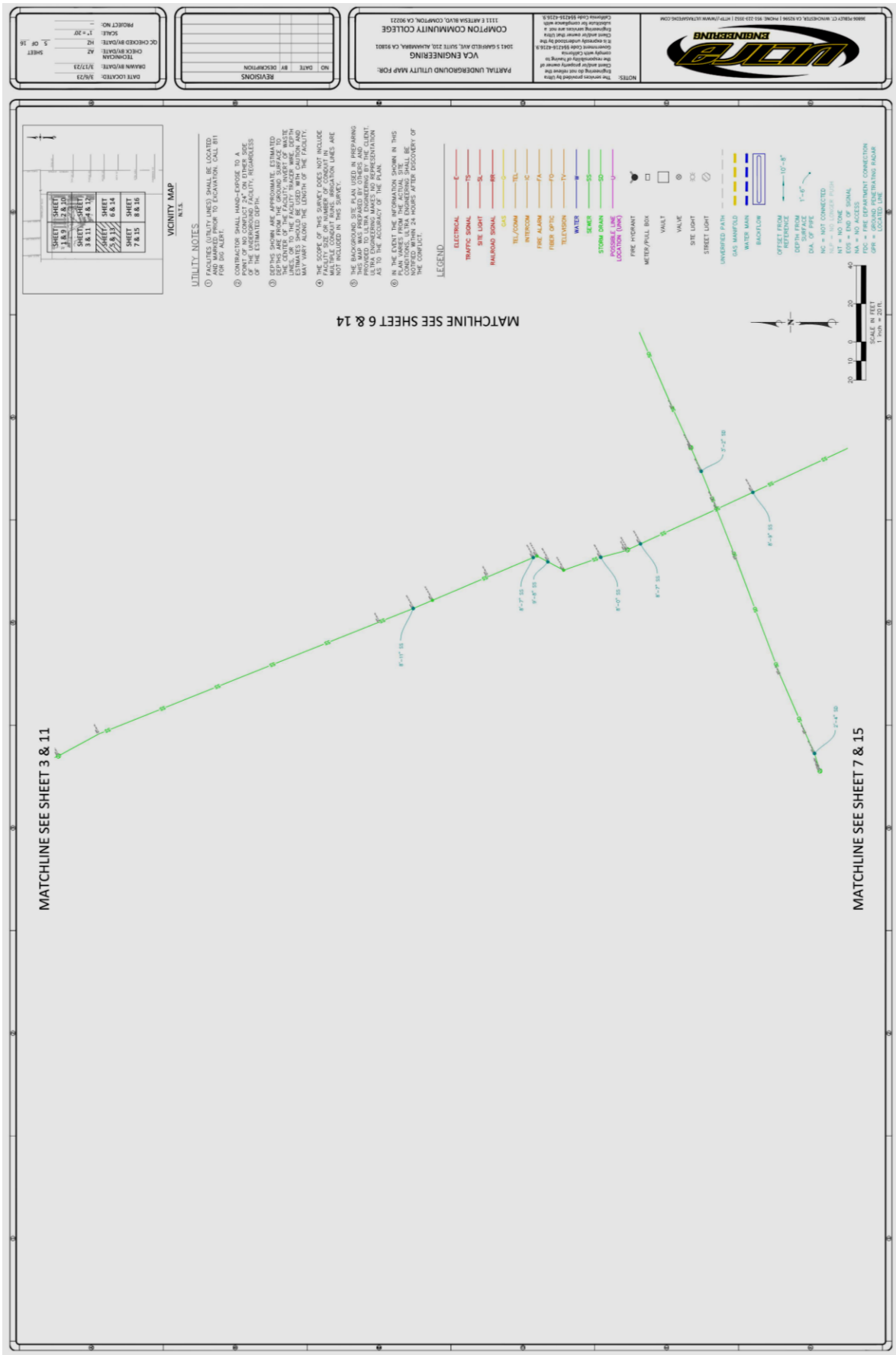

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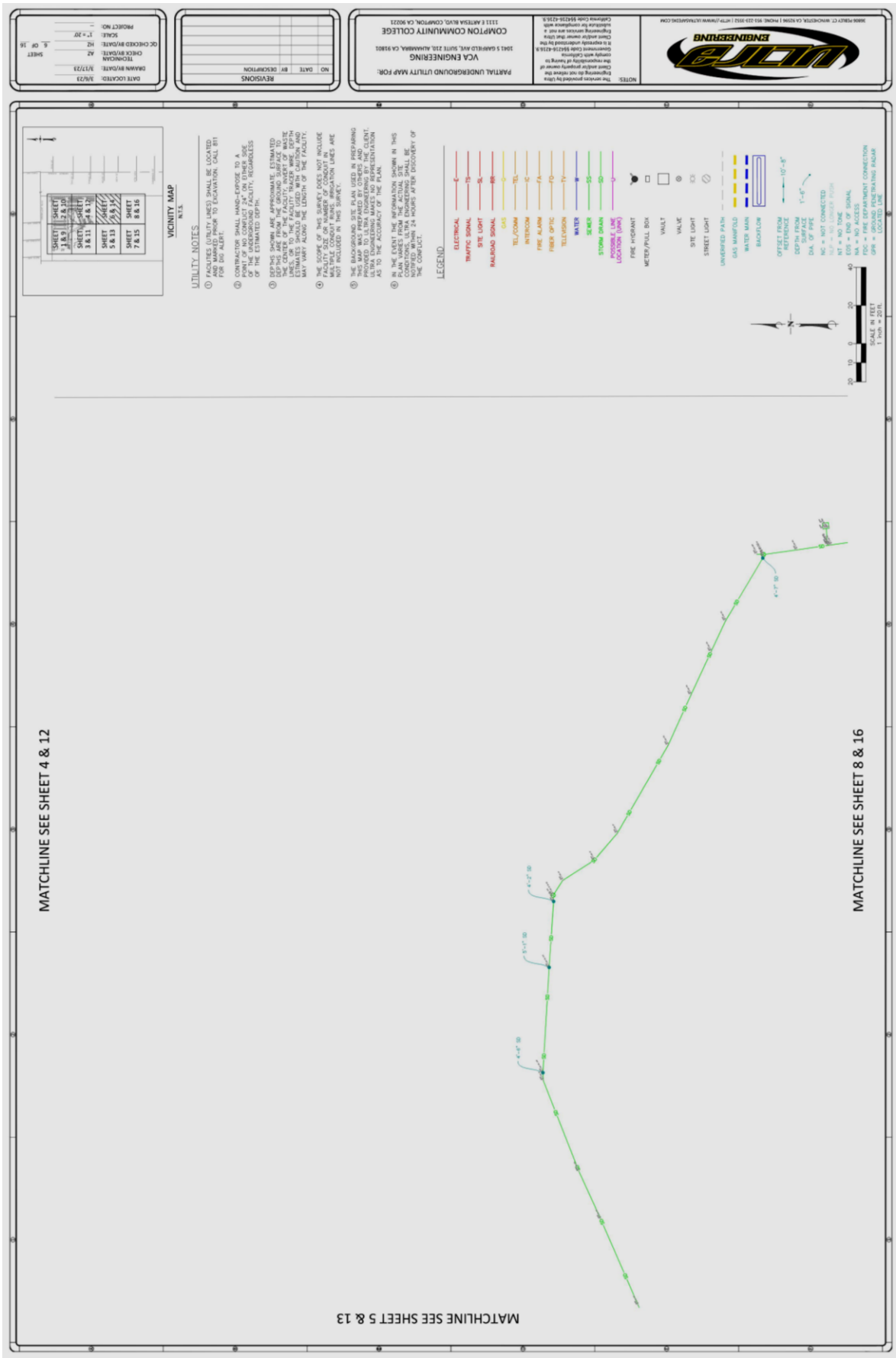

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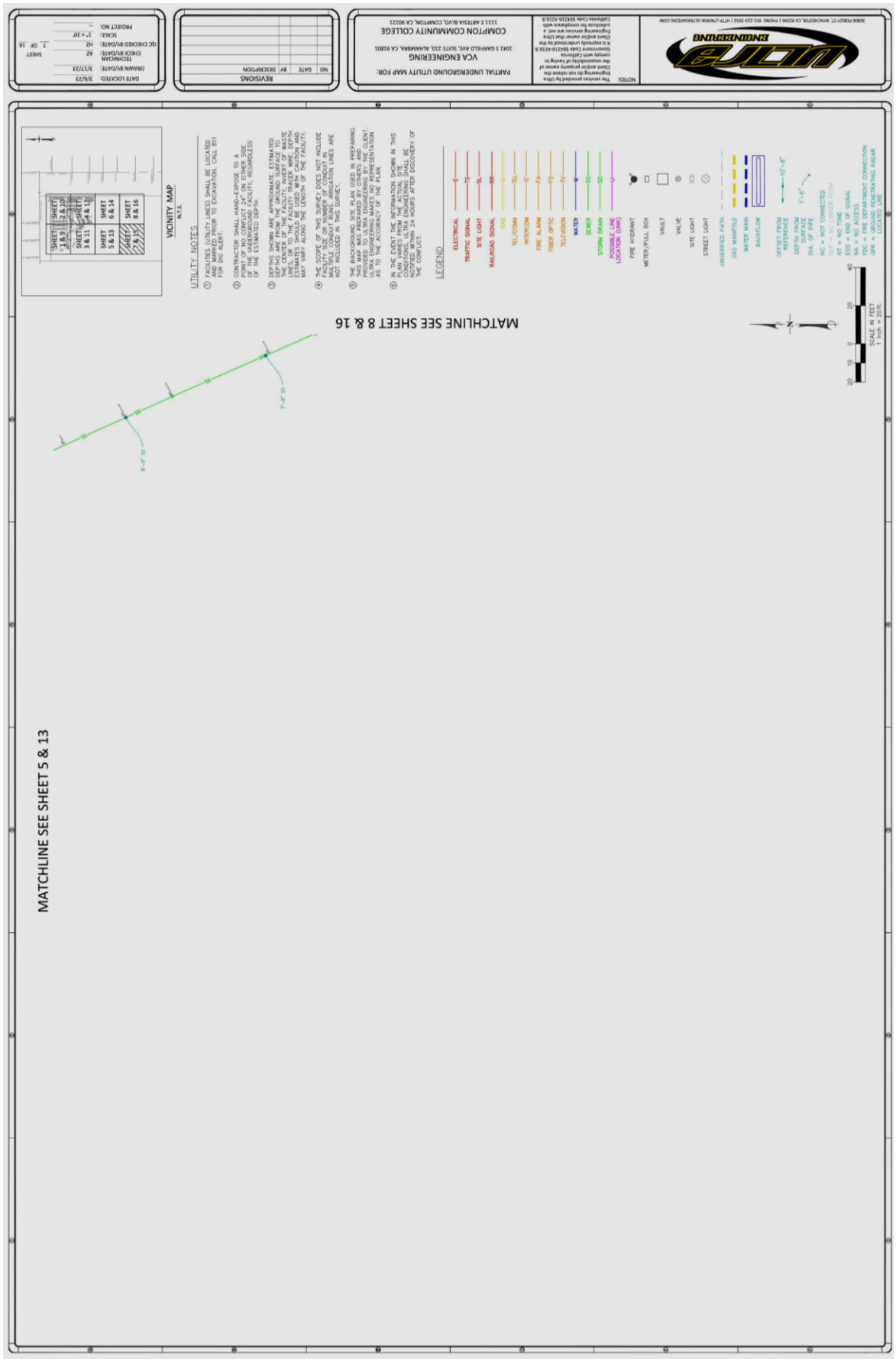

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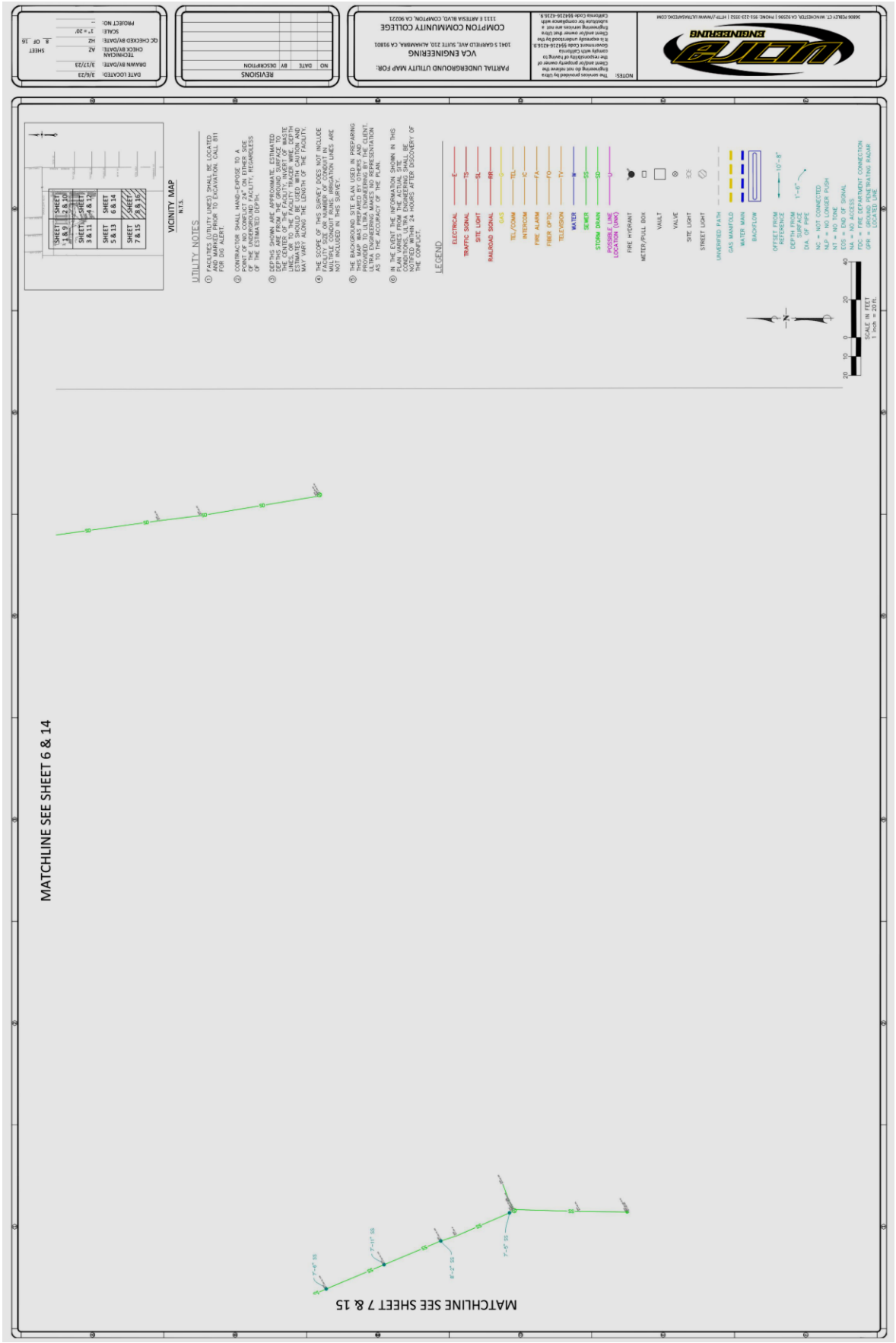

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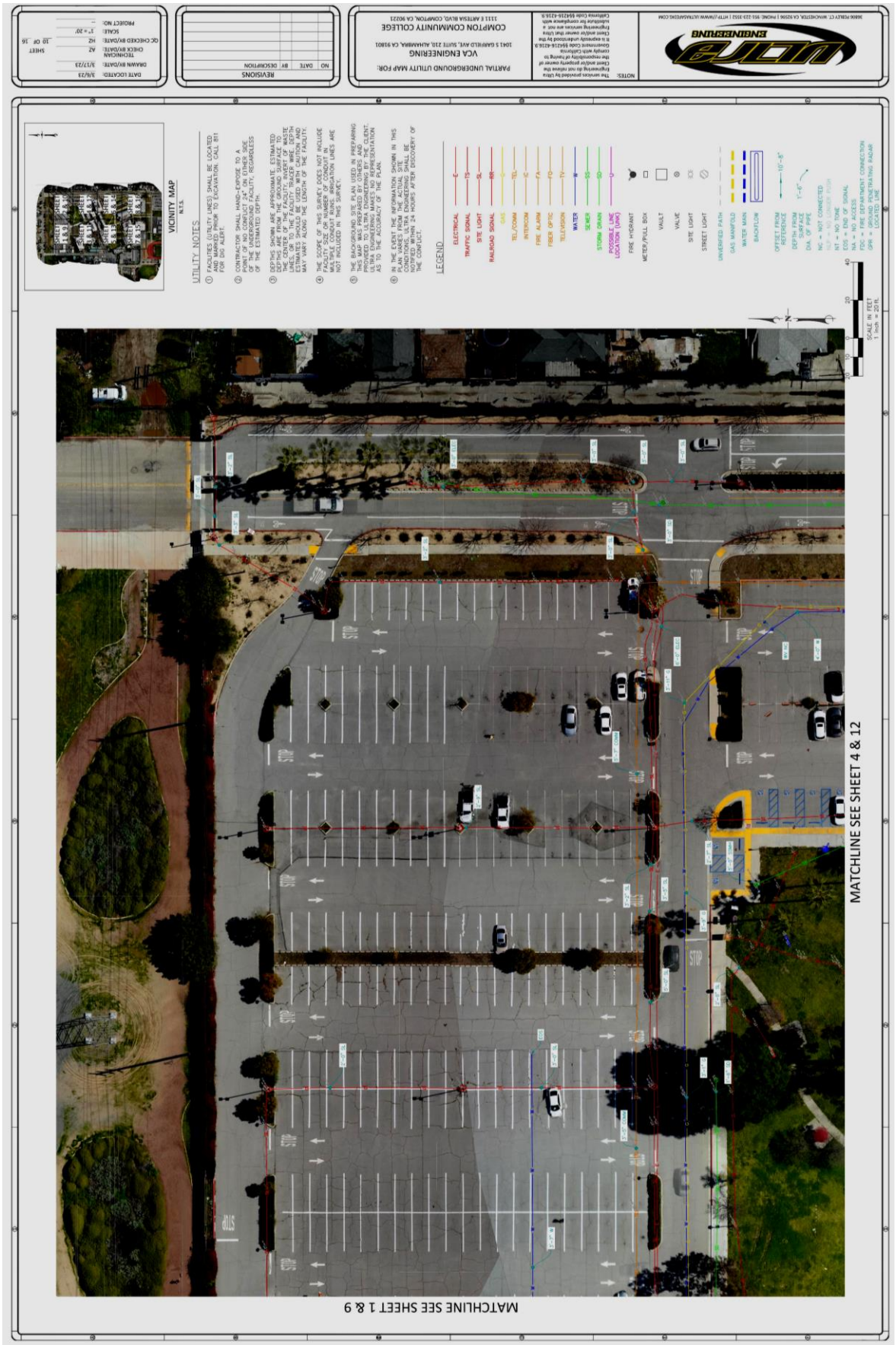

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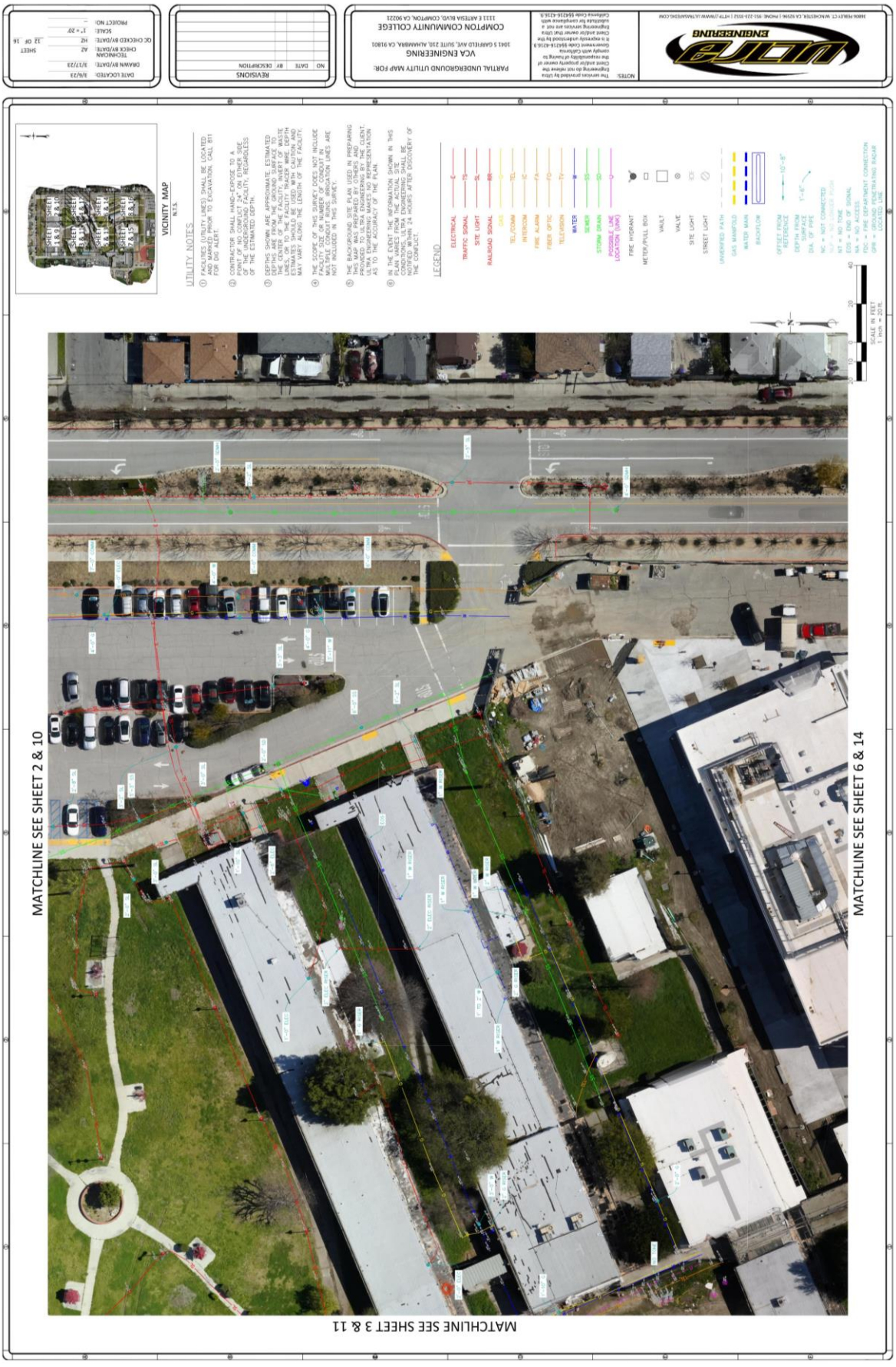

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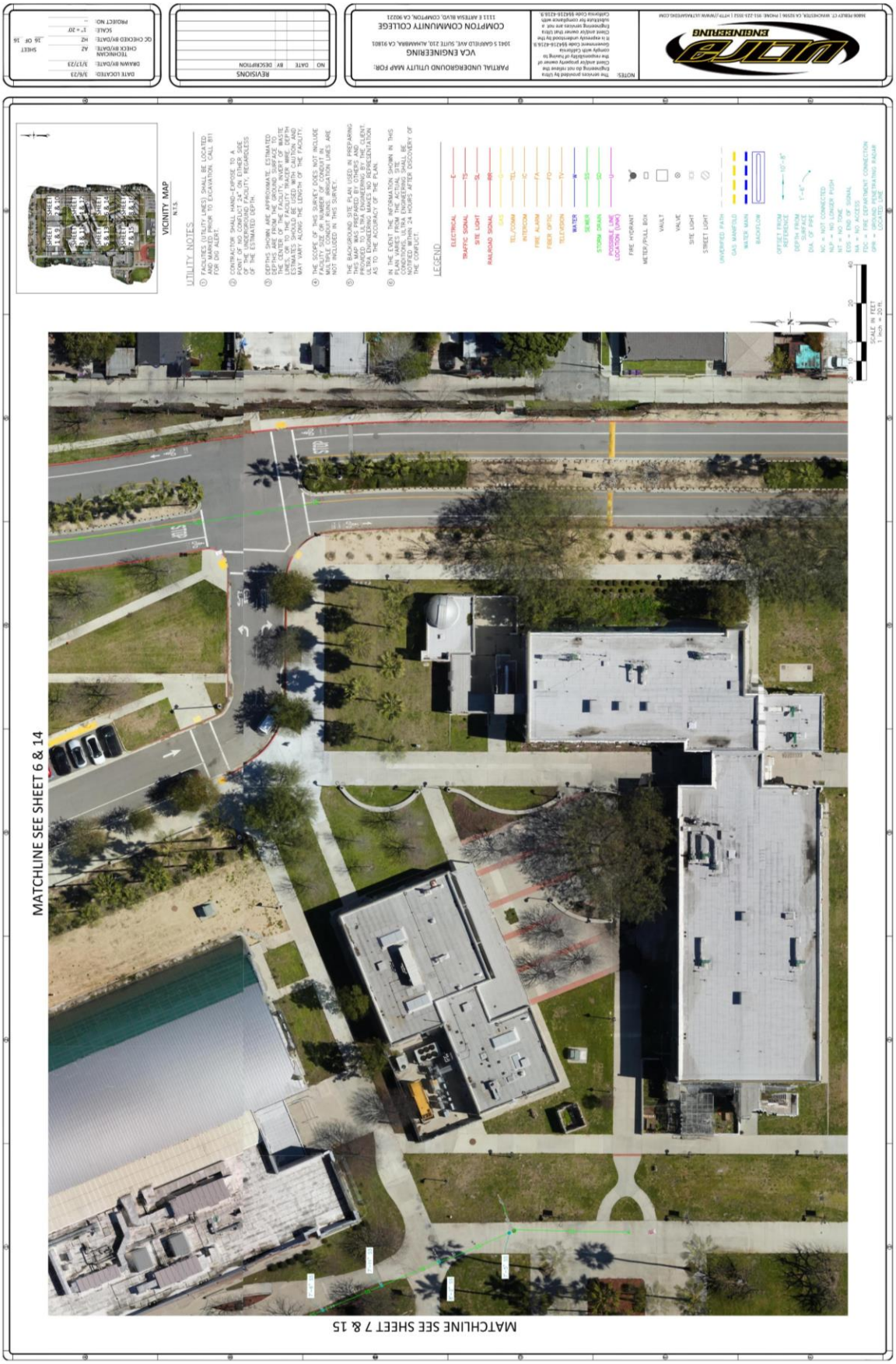

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APPENDIX C

TOPOGRAPHICAL SURVEY

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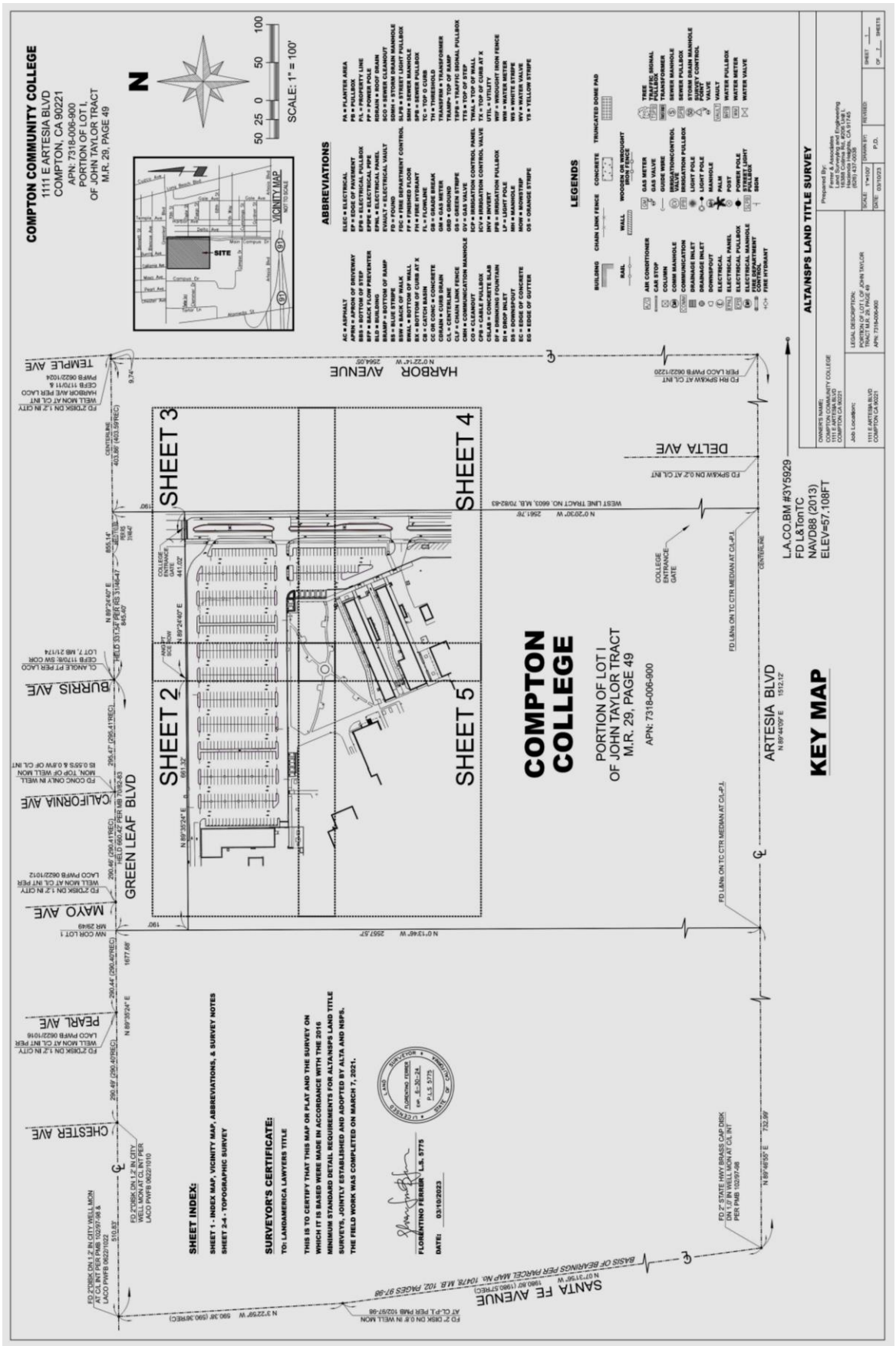

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1041 S Garfield Ave #210, Alhambra CA 91801
Tel: 323-729-6098 ▪ **Fax:** 323-729-6043
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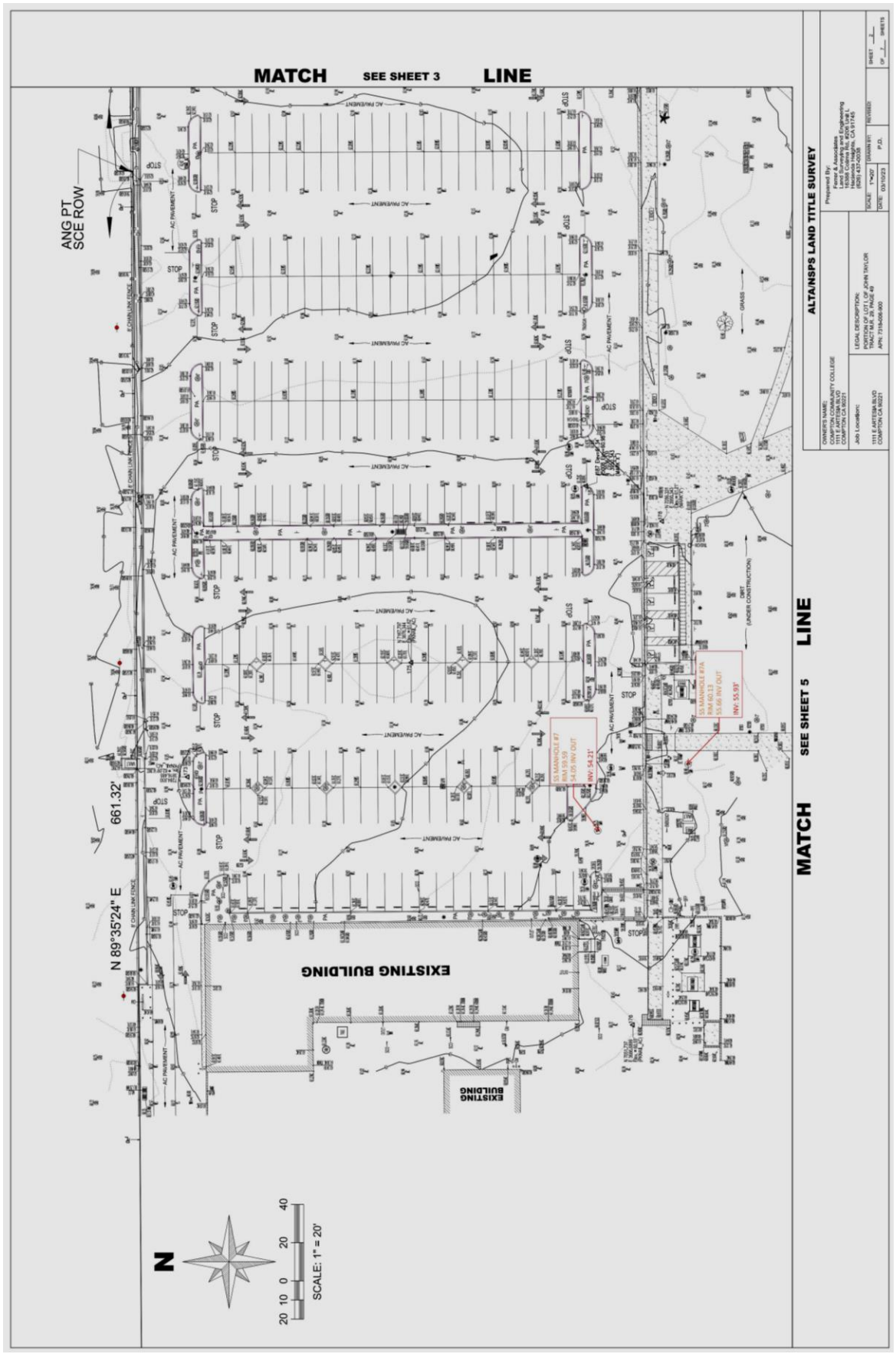

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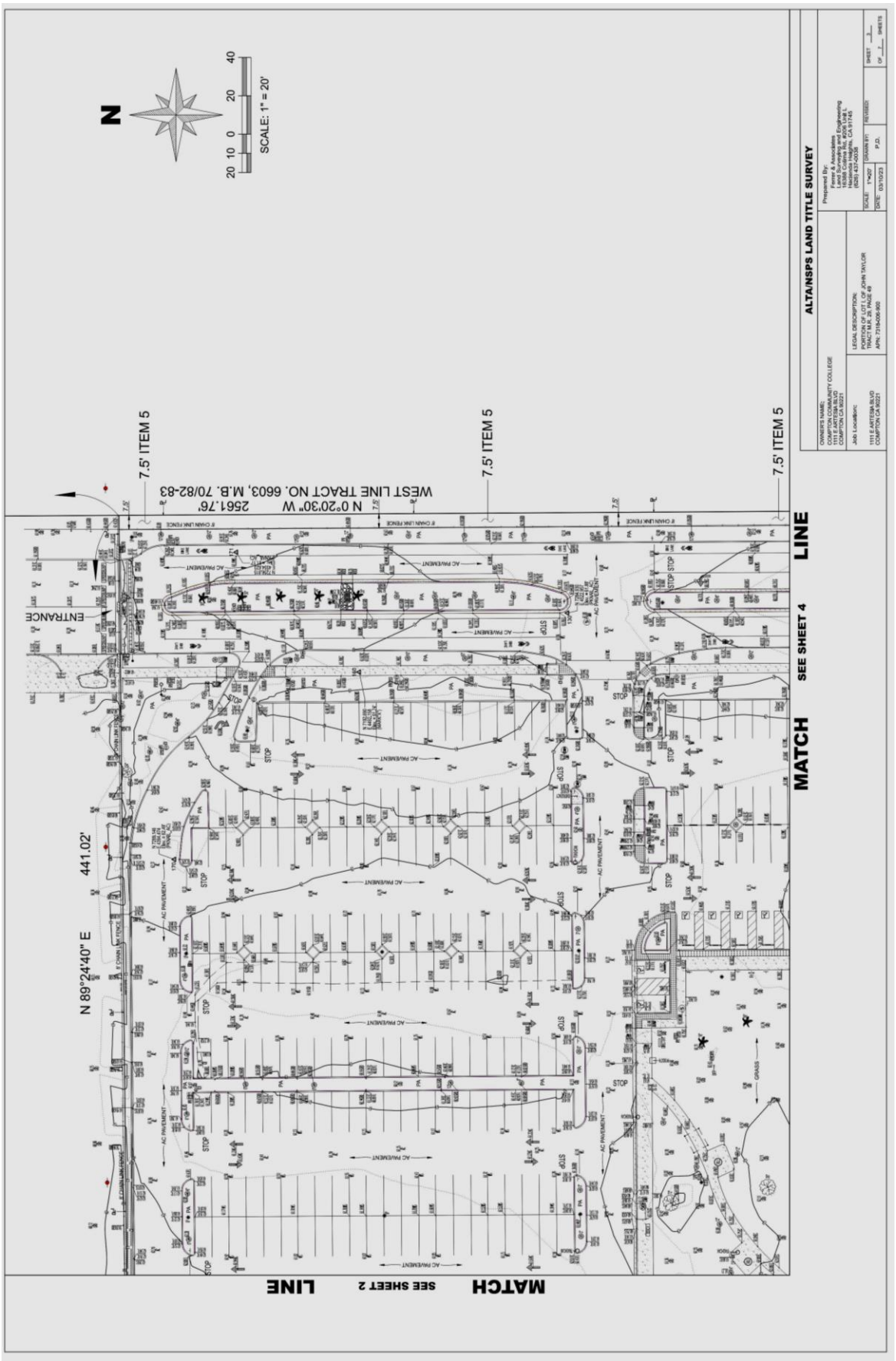

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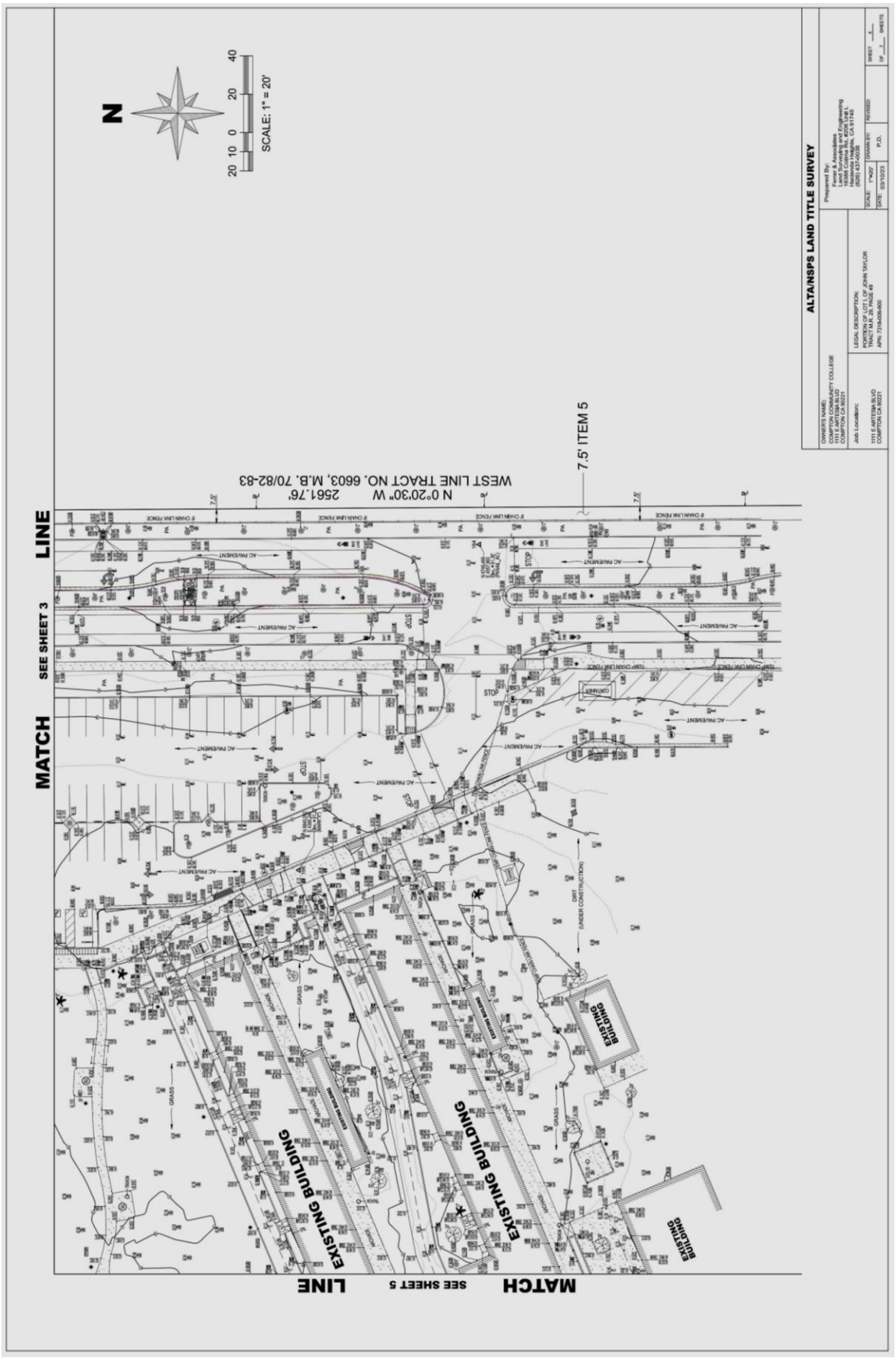

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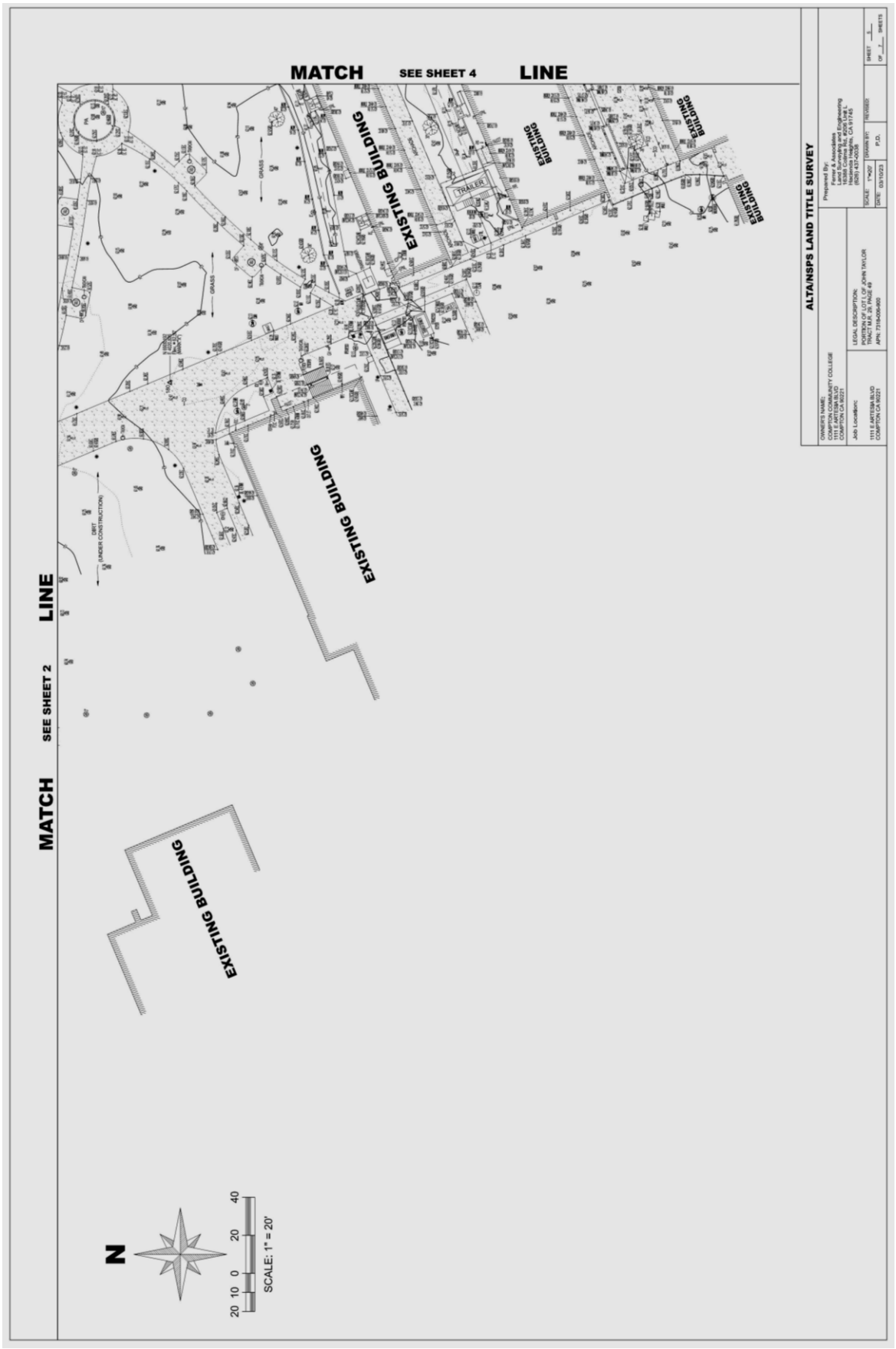

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SURVEYOR'S NOTES:

1. THE FOLLOWING TITLE REPORT WAS RELIED UPON IN THE PREPARATION OF THIS SURVEY:
   TITLE REPORT NO. LT-2005-0119295
   BY: LANDAMERICA LAWYERS TITLE
   SEE TITLE REPORT CITED FOR FULL EXCEPTIONS AND EXCLUSIONS DISCLOSED THEREWITH.
2. ZONING DISTRICT:
   THIS PROPERTY IS LOCATED IN ZONING RM - MEDIUM DENSITY RESIDENTIAL.
3. UTILITY NOTE:
   THE LOCATION OF UTILITIES SHOWN HEREON ARE FROM OBSERVED EVIDENCE OF ABOVE GROUND APPURTENANCES. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED FROM THE INFORMATION PROVIDED. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.
4. FLOOD ZONE:
   THIS PROPERTY IS LOCATED WITHIN SHADED ZONE X PER FEMA FLOOD INSURANCE RATEMAP NUMBER 06037C1815F, DATED SEPTEMBER 26, 2008. SHADED ZONE X INDICATES AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD.
5. THE BASIS OF BEARINGS FOR THIS ALTA/NSPS LAND TITLE SURVEY IS N 07°31'56" W FOR THE CENTER LINE OF SANTA FE AVENUE AS SHOWN ON PACEL MAP No. 10478, M.B. 102, PAGES 97-98, RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF LOS ANGELES COUNTY.
6. THE VERTICAL BENCHMARK FOR THIS ALTA/NSPS LAND TITLE SURVEY IS A A LOS ANGELES COUNTY PUBLIC WORKS BENCHMARK 3Y5929, BEING A L&TAG LS#5411 E CB SUSANA RD 0.5FT S/O BCR @ SE COR ARTESIA BLVD.

   DATUM: NAVD 1988;
   ELEVATION = 57.108 FEET (2013 ADJUSTMENT)
7. CONTOUR INTERVAL = 0.50'
8. THE PROPERTY ADDRESS IS 1111 E ARTESIA BLVD, COMPTON CA 90221.
   THE ASSESSOR'S PARCEL NUMBER IS 7318-006-900.

LEGAL DESCRIPTION PER PRELIMINARY TITLE REPORT:

THE FOLLOWING LEGAL DESCRIPTION IS PER TITLE REPORT, ORDER NO. LT-2005-0119295, PREPARED BY LANDAMERICA LAWYERS TITLE. THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA AND IS DESCRIBED AS FOLLOWS;

APN: 7318-006-900

PARCEL I;
THAT PORTION OF LOT 1OF THE JOHN TAYLOR TRACT, IN THE CITY OF COMPTON, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 29 PAGE 49 OF MISCELLANEOUS RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, DESCRIBED AS FOLLOWS;

BEGINNING AT A POINT IN THE WESTERLY LINE OF SAID LOT 1, SAID POINT BEING THE NORTHEASTERLY CORNER OF LOT 9 OF THE HELLMAN TRACT AS SHOWN ON MAP RECORDED IN BOOK 2 PAGE 524 ET SEQ., OF MISCELLANEOUS RECORDS, IN THE OFFICE OF SAID RECORDER; THENCE ALONG THE EASTERLY PROLONGATION OF THE NORTHERLY LINE OF SAID LOT 9, NORTH 89° 54' OOK EAST 398.52 FEET TO A LINE THAT IS PARALLEL WITH AND DISTANT 398.52 FEET EASTERLY AT RIGHT ANGLES FROM THE WESTERLY LINE OF SAID LOT 1; THENCE ALONG SAID PARALLEL LINE NORTH 1029.68 FEET TO THE SOUTHERLY LINE OF THE LAND DESCRIBED IN DEED TO SOUTHERN CALIFORNIA EDISON COMPANY FILED AS DOCUMENT NO. 156591 UNDER CERTIFICATE OF TITLE NO. FI-53077 IN THE OFFICE OF THE REGISTRAR OF TITLES OF SAID COUNTY; THENCE ALONG SAID SOUTHERLY LINE SOUTH 89° 54' 00" WEST 398.52 FEET TO THE WESTERLY LINE OF SAID LOT 1; THENCE SOUTH 1029.68 FEET TO THE POINT OF BEGINNING.

PARCEL II:
THOSE PORTIONS OF LOTS 1, 4, 5 AND 6 OF THE JOHN TAYLOR TRACT, IN THE CITY OF COMPTON, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS SHOWN ON MAP RECORDED IN BOOK 29 PAGE 49 OF MISCELLANEOUS RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE EASTERLY PROLONGATION OF THE NORTHERLY LINE OF LOT 9 OF HELLMAN TRACT AS SHOWN ON MAP RECORDED IN BOOK 2 PAGE 524, ET SEQ., MISCELLANEOUS RECORDS, IN THE OFFICE OF SAID RECORDER, WITH A LINE THAT IS PARALLEL WITH AND DISTANT 448 .52 FEET EASTERLY AT RIGHT ANGLES FROM THE WESTERLY LINE OF SAID LOT 1; THENCE ALONG SAID EASTERLY PROLONGATION NORTH 89° 54' 00" EAST 405.00 FEET TO A LINE THAT IS PARALLEL WITH AND DISTANT 250.00 FEET WESTERLY AT RIGHT ANGLES FROM THE WESTERLY LINE OF TRACT NO. 6603, AS SHOWN ON MAP RECORDED IN BOOK 70 PAGE 82 ET SEQ., OF MAPS, IN THE OFFICE OF SAID RECORDER; THENCE ALONG LAST MENTIONED PARALLEL LINE NORTH 0° 02' 10" EAST

LEGAL DESCRIPTION PER PRELIMINARY TITLE REPORT: (CONT.)

PARCEL II (CONT.):
1029.68 FEET TO THE SOUTHERLY LINE OF THE LAND DESCRIBED IN DEED TO SOUTHERN CALIFORNIA EDISON COMPANY FILED AS DOCUMENT NO. 156591 UNDER CERTIFICATE OF TITLE NO. FI-53077 IN THE OFFICE OF THE REGISTRAR OF TITLES OF SAID COUNTY; THENCE ALONG SAID SOUTHERLY LINE SOUTH 89° 54' 00" WEST 405.00 FEET TO A LINE THAT IS PARALLEL WITH SAID WESTERLY LINE OF LOT 1 AND PASSES THROUGH THE POINT OF BEGINNING, THENCE SOUTH 1029.68 FEET TO THE POINT OF BEGINNING.

PARCEL III:

THAT PORTION OF LOT 1OF THE JOHN TAYLOR TRACT, IN THE CITY OF COMPTON, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS SHOWN ON THE MAP RECORDED IN BOOK 29 PAGE 49 MISCELLANEOUS RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, DESCRIBED AS FOLLOWS :

BEGINNING AT A POINT IN THE WESTERLY LINE OF SAID LOT 1, SAID POINT BEING THE NORTHEASTERLY COMER OF LOT 9 OF THE HELLMAN TRACT AS SHOWN ON MAP RECORDED IN BOOK 2 PAGE 524, ET SEQ., MISCELLANEOUS RECORDS IN THE OFFICE OF SAID RECORDER; THENCE ALONG THE EASTERLY PROLONGATION OF THE NORTHERLY LINE OF SAID LOT 9 NORTH 89° 54' 00" EAST 398.52 FEET TO A LINE THAT IS PARALLEL WITH AND DISTANT 398.52 FEET EASTERLY AT RIGHT ANGLES FROM THE WESTERTY LINE OF SAID LOT 1; THENCE ALONG SAID PARALLEL LINE SOUTH 182.32 FEET TO THE BEGINNING OF A TANGENT CURVE CONCAVE NORTHWESTERLY AND HAVING A RADIUS OF 452.68 FEET; THENCE SOUTHWESTERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 83° 07' 43" A DISTANCE OF 656.78 FEET TO THE WESTERLY LINE OF SAID LOT 1; THENCE NORTH 631.75 FEET TO THE POINT OF BEGINNING.

PARCEL IV:

THOSE PORTIONS OF LOTS 1, 2 AND 4 OF THE JOHN TAYLOR TRACT, IN THE CITY OF COMPTON, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS SHOWN ON MAP RECORDED IN BOOK 29 PAGE 49 MISCELLANEOUS RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE EASTERLY PROLONGATION OF THE NORTHERLY LINE OF LOT 9 OF THE HELLMAN TRACT AS SHOWN ON MAP RECORDED IN BOOK 2 PAGE 524 ET SEQ., MISCELLANEOUS RECORDS, IN THE OFFICE OF THE SAID RECORDER WITH A LINE THAT IS PARALLEL WITH AND DISTANT 448.52 FEET EASTERLY AT RIGHT ANGLES FROM THE WESTERLY LINE OF SAID LOT 1; THENCE ALONG SAID PARALLEL LINE SOUTH 182.33 FEET TO THE BEGINNING OF A TANGENT CURVE CONCAVE NORTHWESTERLY AND HAVING A RADIUS OF 502.68 FEET; THENCE SOUTHWESTERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 83° 48' 53" A DISTANCE OF 735.34 FEET TO THE WESTERLY LINE OF SAID LOT 1; THENCE ALONG SAID WESTERLY LINE SOUTH 637.93 FEET TO THE SOUTHERLY LINE OF SAID LOT 1; THENCE ALONG SAID SOUTHERLY LINE AND THE SOUTHERLY LINE OF SAID LOT 2 NORTH 89° 54' 00" EAST 853.52 FEET TO A LINE THAT IS PARALLEL WITH AND DISTANT 250.00 FEET WESTERLY AT RIGHT ANGLES FROM THE WESTERLY LINE OF TRACT NO. 6603, AS SHOWN ON MAP RECORDED IN BOOK 70 PAGE 82 ET SEQ., OF MAPS, IN THE OFFICE OF SAID RECORDER, AND THE EASTERLY LINE OF SAID LOT 2; THENCE ALONG LAST MENTIONED PARALLEL LINE NORTH OO 02' 10" EAST 1320.00 FEET TO SAID EASTERLY PROLONGATION OF THE NORTHERLY LINE OF LOT 9; THENCE SOUTH 89° 54'00" WEST 405.00 FEET TO THE POINT OF BEGINNING.

EXCEPT THE SOUTHERLY 38.5 FEET THEREOF.
SAID PARCELS I THRU IV ARE REGISTERED UNDER THE LAND TITLE LAW.

PARCEL V :

THAT PORTION OF LOT 1OF THE JOHN TAYLOR TRACT, IN THE CITY OF COMPTON, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 29 PAGE 49 OF MISCELLANEOUS RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE EASTERLY PROLONGATION OF THE NORTHERLY LINE OF LOT 9 OF THE HELLMAN TRACT, AS PER MAP RECORDED IN BOOK 2 PAGE 524 ET SEQ.,OF MISCELLANEOUS RECORDS OF SAID COUNTY, WITH A LINE THAT IS PARALLEL WITH AND DISTANT EASTERLY 448.52 FEET, MEASURED AT RIGHT ANGLES, FROM THE WESTERLY LINE OF SAID LOT 1; THENCE ALONG SAID PARALLEL LINE, SOUTH 182.33 FEET TO THE BEGINNING OF A TANGENT CURVE CONCAVE NORTHWESTERLY HAVING A RADIUS OF 502.68 FEET; THENCE SOUTHWESTERLY ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 83° 48' 53", A DISTANCE OF 735.34 FEET TO THE WESTERLY LINE OF SAID LOT 1; THENCE NORTH ALONG SAID WESTERLY LINE 50.32 FEET TO A POINT IN A CURVE CONCAVE NORTHWESTERLY HAVING A RADIUS OF 452 .68 FEET, SAID CURVE BEING CONCENTRIC WITH AND DISTANT NORTHWESTERLY 50 FEET, MEASURED RADIALLY FROM THE CURVE HEREINBEFORE MENTIONED AS HAVING A RADIUS OF 502.68 FEET; THENCE NORTHEASTERLY ALONG SAID CURVE HAVING A RADIUS OF 452.68 FEET THROUGH A CENTRAL ANGLE OF 83° 07' 43", A DISTANCE OF 656.78 FEET TO ITS POINT OF TANGENCY WITH A LINE PARALLEL WITH AND DISTANT EASTERLY 398.52 FEET, MEASURED AT RIGHT ANGLES, FROM SAID WESTERLY LINE OF LOT 1; THENCE NORTH ALONG SAID LAST MENTIONED PARALLEL LINE 1212.00 FEET TO THE SOUTHERTY LINE OF THE LAND DESCRIBED IN DEED TO SOUTHERN CALIFORNIA EDISON COMPANY, FILED AS DOCUMENT NO. 156591 UNDER CERTIFICATE OF TITLE NO. FI-53077, IN THE OFFICE OF THE REGISTRAR OF TITLES OF SAID COUNTY; THENCE ALONG SAID SOUTHERLY LINE, NORTH 89° 54' WEST SO FEET TO A LINE PARALLEL WITH SAID EASTERLY LINE OF LOT 1WHICH PASSES THROUGH THE POINT OF BEGINNING; THENCE SOUTH ALONG SAID PARALLEL LINE 1029.68 FEET TO THE POINT OF BEGINNING.

LEGAL DESCRIPTION PER PRELIMINARY TITLE REPORT: (CONT.)

PARCEL V (CONT.) :
SAID LAND IS REGISTERED UNDER THE LAND TITLE LAW.
EXCEPT THEREFROM ALL MINERALS, PETROLEUM, OIL, NATURAL GAS, AND PRODUCTS DERIVED THEREFROM, WITHIN OR UNDERLYING SAID LAND OR THAT MAY BE PRODUCED THEREFROM, AND ALL RIGHTS THERETO; PROVIDED, HOWEVER, THAT FIRST PARTY, ITS SUCCESSORS OR ASSIGNS, SHALL NOT USE THE SURFACE OF SAID LAND IN THE EXERCISE OF ANY OF SAID RIGHTS, BUT SHALL HAVE THE RIGHT TO ENTER BENEATH THE SURFACE OF SAID LAND BY LATERAL OR SLANT DRILLING AND BORING FOR SUCH PURPOSES; PROVIDED, FURTHER, THAT IN SO DOING FIRST PARTY, ITS SUCCESSORS OR ASSIGNS, SHALL NOT DISTURB THE SURFACE OF SAID LAND, OR ANY IMPROVEMENTS THEREON, OR REMOVE OR IMPAIR THE LATERAL OF SUBJACENT SUPPORT OF SAID LAND, OR ANY IMPROVEMENTS THEREON, AS EXCEPTED AND RESERVED IN THE DEED FROM SOUTHERN PACIFIC COMPANY, A CORPORATION, TO COMPTON JUNIOR COLLEGE DISTRICT OF LOS ANGELES COUNTY, REGISTERED NOVEMBER 5, 1951, IN THE OFFICE OF THE REGISTRAR OF TITLES.

PARCEL VI:

THOSE PORTIONS OF LOTS 2, 4, 5, AND 6 OF THE JOHN TAYLOR TRACT, PARTLY IN THE CITY OF LONG BEACH, AND PARTLY IN THE CITY OF COMPTON, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 29 PAGE 49 OF MISCELLANEOUS RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE SOUTHERLY LINE OF SAID LOT 2, WITH A LINE PARALLEL WITH AND DISTANT WESTERLY 250 FEET, MEASURED AT RIGHT ANGLES, FROM THE WESTERLY LINE, AND ITS SOUTHERLY PROLONGATION, OF TRACT NO. 6603, AS PER MAP RECORDED IN BOOK 70 PAGES 82 AND 83 OF MAPS, RECORDS OF SAID COUNTY; THENCE ALONG SAID SOUTHERLY LINE, NORTH 89° 54' EAST 250 FEET TO THE SOUTHERLY PROLONGATION OF SAID WESTERLY LINE; THENCE ALONG SAID SOUTHERLY PROLONGATION TO AND ALONG THE WESTERLY LINE OF SAID TRACT NO. 6603; NORTH 0° 02' 10" EAST 2349.68 FEET TO THE SOUTHERLY LINE OF THE LAND DESCRIBED IN DEED TO SOUTHERN CALIFORNIA EDISON COMPANY, FILED AS DOCUMENT NO. 156591 UNDER CERTIFICATE OF TITLE NO. FI-53077, IN THE OFFICE OF THE REGISTRAR OF TITLES OF SAID COUNTY; THENCE ALONG SAID LAST MENTIONED SOUTHERLY LINE SOUTH 89° 54' WEST 250 FEET TO A LINE PARALLEL WITH AND DISTANT WESTERLY 250 FEET MEASURED AT RIGHT ANGLES, FROM SAID WESTERLY LINE OF TRACT NO. 6603; THENCE SOUTH OO 02' 10" WEST 2349.68 FEET TO THE POINT OF BEGINNING.

EXCEPT THEREFROM THE SOUTHERLY 38.5 FEET THEREOF.
SAID LAND IS REGISTERED UNDER THE LAND TITLE LAW.

EXCEPTING THEREFROM ALL MINERALS, PETROLEUM, OIL, NATURAL GAS, AND PRODUCTS DERIVED THEREFROM, WITHIN OR UNDERLYING SAID LAND OR THAT MAY BE PRODUCED THEREFROM, AND ALL RIGHTS THERETO; PROVIDED, HOWEVER, THAT FIRST PARTY, ITS SUCCESSORS OR ASSIGNS, SHALL NOT USE THE SURFACE OF SAID LAND IN THE EXERCISE OF ANY OF SAID RIGHTS, BUT SHALL HAVE THE RIGHT TO ENTER BENEATH THE SURFACE OF SAID LAND BY LATERAL OR SLANT DRILLING AND BORING FOR SUCH PURPOSES; PROVIDED FURTHER, THAT IN SO DOING FIRST PARTY, ITS SUCCESSORS OR ASSIGNS, SHALL NOT DISTURB THE SURFACE OF SAID LAND, OR ANY IMPROVEMENTS THEREON, OR REMOVE OR IMPAIR THE LATERAL OR SUBJACENT SUPPORT OF SAID LAND, OR ANY IMPROVEMENTS THEREON, AS EXCEPTED AND RESERVED IN THE DEED FROM SOUTHERN PACIFIC COMPANY, A CORPORATION, TO COMPTON JUNIOR COLLEGE DISTRICT OF LOS ANGELES COUNTY, REGISTERED NOVEMBER 5, 1951, IN THE OFFICE OF THE COUNTY REGISTRAR OF TITLES.

PARCEL VII:

THAT PORTION OF LOT 9 OF THE HELLMAN TRACT, IN THE CITY OF COMPTON, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 2 PAGE 524 OF MISCELLANEOUS RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT IN THE SOUTHERLY LINE OF SAID LOT, DISTANT NORTH 89° 54' EAST 617.76 FEET FROM THE SOUTHWESTERLY CORNER OF SAID LOT; THENCE NORTH OO 06' WEST 635.00 FEET TO THE TRUE POINT OF BEGINNING; THENCE NORTH AGO 94' EAST 667.22 FEET TO THE BEGINNING OF A TANGENT CURVE CONCAVE NORTHERLY, HAVING A RADIUS OF 502.68 FEET; THENCE EASTERLY ALONG TH.E ARC OF SAID CURVE, A DISTANCE OF 54.27 FEET TO A POINT IN THE EASTERLY LINE OF SAID T,.OT 9, SAID EASTERLY LINE BEING ALSO THE WESTERLY LINE OF LOT 1OF THE JOHN TAYLOR TRACT, AS PER MAP RECORDED IN BOOK 29 PAGE 49 OF MISCELLANEOUS RECORDS OF SAID COUNTY; THENCE ALONG SAID EASTERLY LINE NORTH OO 06' WEST 50.32 FEET TO A POINT IN A CURVE CONCAVE NORTHERLY HAVING A RADIUS OF 452.6A FEET, SAID CURVE BEING CONCENTRIC WITH AND DISTANT NORTHERLY 50 FEET, MEASURED RADIALLY FROM THE CURVE HEREINBEFORE MENTIONED AS HAVING A RADIUS OF 502.68 FEET, SAID POINT BEING ALSO SOUTHEASTERLY CORNER OF THE LAND DESCRIBED IN PARCEL 3 OF THE DEED TO HARVEY MACHINE CO., INC., RECORDED ON DECEMBER 31, 1946, AS INSTRUMENT NO. 1870, IN BOOK 2399A PAGE 249, OF OFFICIAL RECORDS OF SAID COUNTY; THENCE WESTERLY ALONG THE ARC OF SAID CURVE HAVING A RADIUS OF 452.6A FEET, A DISTANCE OF 54.29 FEET; THENCE ALONG THE SOUTHERLY LINE OF SAID LAND, AS DESCRIBED IN SAID PARCEL 3, AND ITS WESTERLY PROLONGATION,

ALTA/NSPS LAND TITLE SURVEY

OWNER'S NAME: COMPTON COMMUNITY COLLEGE 1111 E ARTESIA BLVD COMPTON CA 90221		Prepared By: Ferrer & Associates Land Surveying and Engineering 16388 Colima Rd. #206 Unit L Hacienda Heights, CA 91745 (626) 437-0038			
Job Location: 1111 E ARTESIA BLVD COMPTON CA 90221	LEGAL DESCRIPTION: PORTION OF LOT I, OF JOHN TAYLOR TRACT M.R. 29, PAGE 49 APN: 7318-006-900	SCALE: 1"=20' DATE: 03/10/23	DRAWN BY: P.D.	REVISED:	SHEET 6 OF 7 SHEETS

LEGAL DESCRIPTION PER PRELIMINARY TITLE REPORT: (CONT.)

PARCEL VII (CONT.):
SOUTH 89° 54' WEST 768.70 FEET, MORE OR LESS, TO A LINE BEARING SOUTH 7° 24' 45" EAST FROM A POINT IN THE NORTHERLY LINE OF SAID LOT 9, DISTANT NORTH 89° 54' EAST 605.06 FEET FROM THE NORTHWESTERLY CORNER OF SAID LOT 9; THENCE ALONG SAID LINE OF BEARING SOUTH 7° 24' 45" EAST 50.41 FEET TO A LINE BEARING SOUTH 89° 54' EAST WHICH PASSES THROUGH THE TRUE POINT OF BEGINNING; THENCE NORTH 89° 54' EAST 95.07 FEET TO THE TRUE POINT OF BEGINNING .

EXCEPT THEREFROM THAT PORTION THEREOF INCLUDED WITHIN THAT PORTION OF LOT 9 OF THE HELLMAN TRACT, AS PER MAP RECORDED IN BOOK 2 PAGES 524 AND 525 OF MISCELLANEOUS RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT IN THE NORTHERLY LINE OF SAID LOT 9, DISTANT NORTH 89° 54' EAST THEREON 655.47 FEET FROM THE NORTHWESTERLY CORNER OF SAID LOT; THENCE ALONG SAID NORTHERLY LINE, NORTH 89° 54' 54' EAST 154.98 FEET; THENCE SOUTH 3° 19' OS" EAST 591.41 FEET TO THE BEGINNING OF A TANGENT CURVE, CONCAVE WESTERLY AND HAVING A RADIUS OF 950 FEET; THENCE SOUTHERLY ALONG THE ARC OF SAID CURVE, THROUGH AN ANGLE OF 19° 30' 06" A DISTANCE OF 323.36 FEET; THENCE TANGENT TO SAID CURVE SOUTH 16° 11' 03" WEST 86.15 FEET TO A POINT IN A LINE PARALLEL WITH AND DISTANT NORTHEASTERLY 50 FEET, MEASURED AT RIGHT ANGLES FROM THE WESTERLY LINE OF PARCEL 1OF THE LAND DESCRIBED IN THE DEED TO COMPTON JUNIOR COLLEGE DISTRICT, RECORDED IN BOOK 35436 PAGE 2.5 OF OFFICIAL RECORDS, IN THE OFFICE OF SAID RECORDER; THENCE ALONG SAID PARALLEL LINE AND ITS NORTHWESTERLY PROLONGATION, NORTH 7° 24' 45" EAST, 1001.02 FEET TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM THE NORTHERLY 30 FEET OF ABOVE DESCRIBED LAND MEASURED AT RIGHT ANGLES FROM SAID NORTHERLY LINE OF LOT 9.

EXCEPTING ALSO THEREFROM ALL MINERALS, PETROLEUM, OIL, NATURAL GAS, AND PRODUCTS DERIVED THEREFROM, WITHIN OR UNDERLYING SAID LAND OR THAT MAY BE PRODUCED THEREFROM, AND ALL RIGHTS THERETO; PROVIDED, HOWEVER, THAT FIRST PARTY, ITS SUCCESSORS OR ASSIGNS, SHALL NOT USE THE SURFACE OF SAID LAND IN THE EXERCISE OF ANY OF SAID RIGHTS, BUT SHALL HAVE THE RIGHT TO ENTER BENEATH THE SURFACE OF SAID LAND BY LATERAL OR SLANT DRILLING AND BORING FOR SUCH PURPOSES; PROVIDED, FURTHER, THAT IN SO DOING FIRST PARTY, ITS SUCCESSORS OR ASSIGNS, SHALL NOT DISTURB THE SURFACE OF SAID LAND, OR ANY IMPROVEMENTS THEREON, OR REMOVE OR IMPAIR THE LATERAL OR SUBJACENT SUPPORT OF SAID LAND, OR ANY IMPROVEMENTS THEREON, AS EXCEPTED AND RESERVED IN THE DEED FROM SOUTHERN PACIFIC COMPANY, A CORPORATION, TO COMPTON JUNIOR COLLEGE DISTRICT OF LOS ANGELES COUNTY, REGISTERED NOVEMBER 5, 1951, IN THE OFFICE OF THE REGISTRAR OF TITLES.

ALSO EXCEPTING THEREFROM THAT PORTION OF SAID LAND AS DESCRIBED IN THE DEED TO THE STATE OF CALIFORNIA, RECORDED JUNE 30, 1952 AS INSTRUMENT NO. 2572.

ALSO EXCEPTING THEREFROM THAT PORTION OF SAID LAND AS DESCRIBED IN THE DEED TO THE STATE OF CALIFORNIA, RECORDED JUNE 26, 1969 AS INSTRUMENT NO. 490.

ALSO EXCEPTING THEREFROM THAT PORTION OF SAID LAND AS DESCRIBED IN THE FINAL JUDGMENT IN FAVOR OF THE LOS ANGELES COUNTY FLOOD CONTROL DISTRICT, A BODY CORPORATE AND POLITIC, REGISTERED MAY 20, 1952 AS DOCUMENT NO. 9139-U AS CERTIFICATE NO. IAL-112589-92.

PARCEL VIII:

THAT PORTION OF LOT 3 OF THE JOHN TAYLOR TRACT, AS PER MAP RECORDED IN BOOK 29 PAGE 49 OF MISCELLANEOUS RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT IN THE SOUTHERLY LINE OF SAID LOT, DISTANT WESTERLY 278.71 FEET FROM THE SOUTHEASTERLY CORNER OF SAID LOT; THENCE ALONG SAID SOUTHERLY LINE, WESTERLY 109.93 FEET TO THE SOUTHWESTERLY COMER OF SAID LOT; THENCE ALONG THE WESTERLY LINE OF SAID LOT; NORTHERLY 224.87 FEET TO THE NORTHERLY LINE OF THE SOUTHERLY 224.87 FEET OF SAID LOT; THENCE ALONG SAID NORTHERLY LINE, EASTERLY 109.82 FEET TO A LINE THAT IS PARALLEL WITH THE EASTERLY LINE OF SAID LOT WHICH PASSES THROUGH THE POINT OF BEGINNING; THENCE ALONG SAID PARALLEL LINE, SOUTHERLY 224.87 FEET TO THE POINT OF BEGINNING.

EXCEPT THEREFROM THE SOUTHERLY 38.50 FEET AND THE NORTHERLY 50 FEET THEREOF .

ALSO EXCEPT THEREFROM THE INTEREST IN AN UNDIVIDED 5 PER CENT INTEREST OF ALL OIL, GAS, ASPHALTUM AND OTHER HYDROCARBON SUBSTANCES AND ALL MINERALS CONTAINED IN SAID LAND WHICH WAS RESERVED BY HAROLD A. OLSEN, IN DEED REGISTERED MARCH 26, 1946, AS DOCUMENT NO. 6643-0, ENTERED ON CERTIFICATE NO. QT-37177.

SAID LAND WAS WITHDRAWN FROM THE EFFECT AND OPERATION OF THE LAND TITLE LAW, BY CERTIFICATE OF CANCELLATION AND WITHDRAWAL, RECORDED FEBRUARY 7, 1951, IN BOOK 35515 PAGE 247, OFFICIAL RECORDS.

PARCEL IX:

THAT PORTION OF LOT 9, HELLMAN TRACT, IN THE CITY OF LONG BEACH, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 2 PAGE 524 OF MISCELLANEOUS RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, DESCRIBED AS FOLLOWS:

LEGAL DESCRIPTION PER PRELIMINARY TITLE REPORT: (CONT.)

PARCEL IX (CONT.):
BEGINNING AT A POINT IN THE SOUTHERLY LINE OF SAID LOT 9, DISTANT NORTH 89° 54' EAST 617.76 FEET FROM THE SOUTHWESTERLY CORNER OF SAID LOT; THENCE NORTH 0° 06' WEST 685.00 FEET TO THE TRUE POINT OF BEGINNING; THENCE NORTH 89° 54' EAST 667.22 FEET TO THE BEGINNING OF A TANGENT CURVE CONCAVE NORTHERLY AND HAVING A RADIUS OF 452.68 FEET; THENCE EASTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 54.29 FEET TO A POINT IN THE EASTERLY LINE OF SAID LOT 9, SAID EASTERLY LINE BEING ALSO THE WESTERLY LINE OF LOT 1OF THE JOHN TAYLOR TRACT, AS PER MAP RECORDED IN BOOK 29 PAGE 49 OF MISCELLANEOUS RECORDS; THENCE NORTH 0° 06' WEST ALONG SAID EASTERLY LINE, 631.75 FEET TO THE NORTHEASTERLY CORNER OF SAID LOT 9; THENCE SOUTH 89° 54' WEST ALONG THE NORTHERLY LINE OF SAID LOT 9, A DISTANCE OF 721.38 FEET TO A POINT IN A LINE PASSING THROUGH SAID TRUE POINT OF BEGINNING, AND BEARING NORTH 0° 06' WEST THEREFROM; THENCE SOUTH 0° 06' EAST 635.00 FEET TO THE TRUE POINT OF BEGINNING.

EXCEPTING THE INTEREST IN ALL MINERALS PETROLEUM, OIL, NATURAL GAS AND THE PRODUCTS DERIVED THEREFROM WITHIN OR UNDERLYING SAID LAND, OR THAT MAY BE PRODUCED THEREFROM, AND ALL RIGHTS THERETO, TOGETHER WITH THE RIGHT TO ENTER UPON AND USE THE SUBSURFACE OF SAID LAND TO PROSPECT FOR AND TO DRILL, BORE, RECOVER AND REMOVE THE SAME WHICH WAS EXCEPTED AND RESERVED BY SOUTHERN PACIFIC COMPANY, A CORPORATION, IN DEED RECORDED DECEMBER 31, 1946 IN BOOK 23998 PAGE 249 OF OFFICIAL RECORDS, WHICH PROVIDES, IN PART, THAT THE FIRST PARTY SHALL NOT USE THE SURFACE OF SAID LAND IN THE EXERCISE OF ANY OF SAID RIGHTS.

ALSO EXCEPTING THEREFROM THAT PORTION OF SAID LAND AS DESCRIBED IN THE DEED TO THE STATE OF CALIFORNIA, RECORDED JUNE 30, 1952 AS INSTRUMENT NO.2572.

ALSO EXCEPTING THEREFROM THAT PORTION OF SAID LAND DESCRIBED IN THE DEED TO STATE OF CALIFORNIA RECORDED JUNE 26, 1969 AS INSTRUMENT NO.490.

ALSO EXCEPTING THEREFROM THAT PORTION OF SAID LAND AS DESCRIBED IN THE FINAL JUDGMENT IN FAVOR OF THE LOS ANGELES COUNTY FLOOD CONTROL DISTRICT, A BODY CORPORATE AND POLITIC, REGISTERED MAY 20, 1952 AS DOCUMENT NO. 9139-U AS CERTIFICATE NO. IAL-112589-92.

PARCEL X :

THAT PORTION OF LOT 9 OF THE HELLMAN TRACT, IN THE CITY OF LONG BEACH, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 2 PAGE 524 OF MISCELLANEOUS RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY,DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT IN THE SOUTHERLY LINE OF SAID LOT 9, DISTANT NORTH 89° 54' EAST, THEREON 617.76 FEET FROM THE SOUTHWESTERLY CORNER OF SAID LOT; THENCE NORTH 0° 06' WEST, 635.00 FEET; THENCE NORTH 89° 54' EAST 667.22 FEET TO THE BEGINNING OF A TANGENT CURVE CONCAVE NORTHERLY, HAVING A RADIUS OF 502.68 FEET; THENCE EASTERLY ALONG THE ARC OF SAID CURVE, A DISTANCE OF 54.27 FEET TO A POINT IN THE EASTERLY LINE OF SAID LOT 9, SAID EASTERLY LINE BEING ALSO THE WESTERLY LINE OF LOT 1 OF THE JOHN TAYLOR TRACT, AS PER MAP RECORDED IN BOOK 29 PAGE 49 OF MISCELLANEOUS RECORDS; THENCE SOUTH 0° 06' EAST 637.93 FEET TO THE SOUTHEASTERLY CORNER OF SAID LOT 9; THENCE SOUTH 89° 54' WEST ALONG THE SOUTHERLY LINE OF SAID LOT 9, A DISTANCE OF 721.38 FEET TO THE POINT OF BEGINNING.

EXCEPTING THE INTEREST IN ALL MINERALS, PETROLEUM, OIL, NATURAL GAS AND THE PRODUCTS DERIVED THEREFROM WITHIN OR UNDERLYING SAID LAND, OR THAT MAY BE PRODUCED THEREFROM, AND ALL RIGHTS THERETO, TOGETHER WITH THE RIGHT TO ENTER UPON AND USE THE SUBSURFACE OF SAID LAND TO PROSPECT TO FOR AND TO DRILL, BORE, RECOVER AND REMOVE THE SAME THAT WHICH WAS EXCEPTED AND RESERVED BY SOUTHERN PACIFIC COMPANY, A CORPORATION, IN DEED RECORDED DECEMBER 31, 1946 IN BOOK 23998 PAGE 249 OF OFFICIAL RECORDS, WHICH PROVIDES, IN PART, THAT THE FIRST PARTY SHALL NOT USE THE SURFACE OF SAID LAND IN THE EXERCISE OF ANY SAID RIGHTS.

PARCEL XI:

A PORTION OF LOT X OF THE HELLMAN TRACT, IN THE CITY OF COMPTON, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 2 PAGES 524 AND 525 OF MISCELLANEOUS RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, MORE PARTICULARLY DESCRIBED AS FOLLOWS:
BEGINNING AT A 2 INCH IRON PIPE AT THE SOUTHEASTERLY CORNER OF LOT X; THENCE SOUTH 89° 46' 50" WEST ALONG THE SOUTHERLY LINE OF SAID LOT X, A DISTANCE OF 602.03 FEET, MORE OR LESS, TO A 3/4 INCH PIPE IN THE EASTERLY LINE OF THE LOS ANGELES COUNTY FLOOD CONTROL RIGHT OF WAY; THENCE NORTHWESTERLY ALONG SAID EASTERLY LINE 140.22 FEET, MORE OR LESS, TO A LLNE THAT IS PARALLEL WITH AND DISTANT NORTHERLY AT RIGHT ANGLE 140.00 FEET FROM THE SOUTHERLY LINE OF SAID LOT X; THENCE NORTH 89° 46' SO" EAST ALONG SAID PARALLEL LINE TO A POINT IN THE EASTERLY LINE OF SAID JOT X; THENCE SOUTHERLY ALONG SAID EASTERLY LINE 140.00 FEET, MORE OR LESS, TO THE POINT OF BEGINNING.
EXCEPT THEREFROM ALL OIL, GAS, MINERALS AND OTHER HYDROCARBON SUBSTANCES LYING BELOW THE SURFACE OF SAID LAND, BUT WITH NO RIGHT OF SURFACE ENTRY AS PROVIDED IN DEEDS OF RECORD.
SAID LAND HAS BEEN WITHDRAWN FROM THE EFFECT AND OPERATION OF THE LAND TITLE JAW BY CERTIFICATE OF CANCELLATION AND WITHDRAWAL RECORDED MAY 13, 1952.

LAND EXCLUSIONS AND EXCEPTIONS TO TITLE COVERAGE:

(SEE PRELIMINARY TITLE REPORT CITED IN NOTE 1 FOR COMPLETE EXCEPTIONS AND EXCLUSIONS DISCLOSED THEREWITH)

ORDER NO. LT-2005-0119295

ITEM 1 - MINERALS, OIL, GAS, BELOW GROUND. [NOT PLOTTED]

ITEM 3 - WITHIN LOT 9 (BEYOND TOPO LIMITS). [NOT PLOTTED]

ITEM 4 - S.C. EDISON UTILITY EASEMENT PLOTTED; SUBJECT TO RELOCATION. [PLOTTED]

ITEM 5 - NOT AN EASEMENT; CITY RESOLUTION ACCEPTING 7.5' WIDE LAND GRANT CONVEYED IN FEE FOR ROADWAY PURPOSES. [PLOTTED]

ITEM 7 - WITHIN LOT 9 (BEYOND TOPO LIMITS). [NOT PLOTTED]

ITEM 8 - WITHIN LOT 9 (BEYOND TOPO LIMITS). [NOT PLOTTED]

ITEM 9 - WITHIN LOT 9 (BEYOND TOPO LIMITS). [NOT PLOTTED]

ITEM 10 - S.C. EDISON UTILITY EASEMENT PLOTTED. [PLOTTED]

ITEM 13 - THAT THE PROPERTY RESIDES WITHIN THE WALNUT INDUSTRIAL PARK REDEVELOPMENT PROJECT AREA. [NOT PLOTTED]

ITEM 14 - PLOTTED NEAR ARTESIA BLVD (BEYOND TOPO LIMITS). [PLOTTED]

ITEM 16 - LEASE AGREEMENT. [NOT PLOTTED]

ITEM 17 - TRUST AGREEMENT. [NOT PLOTTED]

ALTA/NSPS LAND TITLE SURVEY

OWNER'S NAME:
COMPTON COMMUNITY COLLEGE
1111 E ARTESIA BLVD
COMPTON CA 90221

Job Location:
1111 E ARTESIA BLVD
COMPTON CA 90221

LEGAL DESCRIPTION:
PORTION OF LOT I, OF JOHN TAYLOR TRACT M.R. 29, PAGE 49
APN: 7318-006-900

Prepared By:
Ferrer & Associates
Land Surveying and Engineering
16388 Colima Rd, #206 Unit L
Hacienda Heights, CA 91745
(626) 437-0038

SCALE: 1"=20' | DATE: 03/10/23 | DRAWN BY: P.D. | REVISED: | SHEET 7 OF 7 SHEETS

APPENDIX D

POTHOLING

Los Angeles
1041 S Garfield Ave #210, Alhambra CA 91801
Tel: 323-729-6098 ▪ **Fax:** 323-729-6043
e-mail: vca@vcaeng.com

Irvine
2151 Michelson Dr. # 242, Irvine, CA 92612
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www.vcaeng.com

Ultra Engineering Contractors, Inc.

31301 Auld Road, Murrieta, CA 92563

1-951-223-3552

Pothole Log Report

for

VCA Engineers, Inc.

Compton

Ultra Engineering Contractors Inc. License # 971768

Los Angeles
1041 S Garfield Ave #210, Alhambra CA 91801
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Irvine
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Date	PH	Location	Surface Material	Surface Depth	Base Material	Base Depth
09/22/2023	005	1111 East Artesia Boulevard, Compton, CA, USA	Other	N/A	None	-

Offset	Utility Type	Material Type	Size	Depth Top	Depth Bottom	Time
-	Other	Other	N/A	N/A	N/A	08:05

Utility Comment N/A

Material Comment N/A

Pothole:

Measurement:

Utility:

Proximity:

Comments: No lateral exist jump inside storm drain and confirmed no lateral comes in from that area took pictures

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2151 Michelson Dr. # 242, Irvine, CA 92612
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Date	PH	Location	Surface Material	Surface Depth	Base Material	Base Depth
09/22/2023	006	1111 East Artesia Boulevard, Compton, CA, USA	Asphalt	4"	Class II	2"

Offset	Utility Type	Material Type	Size	Depth Top	Depth Bottom	Time
-	Storm Drain	RCP	24"	C-1.90	C-3.90	08:23

Utility Comment -

Material Comment -

Pothole:

Measurement:

Utility:

Proximity:

Comments:

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www.vcaeng.com

Date	PH	Location	Surface Material	Surface Depth	Base Material	Base Depth
09/22/2023	004	1111 East Artesia Boulevard, Compton, CA, USA	Other	DIP	None	-

Offset	Utility Type	Material Type	Size	Depth Top	Depth Bottom	Time
-	Sewage	RCP	24"	C-1.70	C-3.70	10:11

Utility Comment -

Material Comment -

Pothole:

Measurement:

Utility:

Proximity:

Comments:

Ultra Engineering Contractors Inc. License # 971768

Date	PH	Location	Surface Material	Surface Depth	Base Material	Base Depth
09/22/2023	003	1111 East Artesia Boulevard, Compton, CA, USA	Other	DIP	None	-

Offset	Utility Type	Material Type	Size	Depth Top	Depth Bottom	Time
-	Sewage	PVC	6"	C-3.80	C-4.30	09:07

Utility Comment -

Material Comment -

Pothole:

Measurement:

Utility:

Proximity:

Comments:

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Date	PH	Location	Surface Material	Surface Depth	Base Material	Base Depth
09/22/2023	003 A	1111 East Artesia Boulevard, Compton, CA, USA	Other	DIP	None	-

Offset	Utility Type	Material Type	Size	Depth Top	Depth Bottom	Time
-	Sewage	Steel	4"	C-3.20	C-3.53	09:09

Utility Comment -

Material Comment -

Pothole:

Measurement:

Utility:

Proximity:

Comments:

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Date	PH	Location	Surface Material	Surface Depth	Base Material	Base Depth
09/22/2023	001	1111 East Artesia Boulevard, Compton, CA, USA	Other	DIP	None	-

Offset	Utility Type	Material Type	Size	Depth Top	Depth Bottom	Time
-	Sewage	PVC	6"	C-7.10	C-7.60	09:40

Utility Comment -

Material Comment -

Pothole:

Measurement:

Utility:

Proximity:

Comments: Manhole # 3

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Date	PH	Location	Surface Material	Surface Depth	Base Material	Base Depth
09/22/2023	002	1111 East Artesia Boulevard, Compton, CA, USA	Other	DIP	None	-

Offset	Utility Type	Material Type	Size	Depth Top	Depth Bottom	Time
-	Sewage	PVC	6"	C-6.75	C-7.25	09:48

Utility Comment -

Material Comment -

Pothole:

Measurement:

Utility:

Proximity:

Comments:

Ultra Engineering Contractors Inc. License # 971768

Date	PH	Location	Surface Material	Surface Depth	Base Material	Base Depth
09/22/2023	007	1111 East Artesia Boulevard, Compton, CA, USA	Other	DIP	None	

Offset	Utility Type	Material Type	Size	Depth Top	Depth Bottom	Time
	Sewage	PVC	10"	C-7.55	C-8.40	

Utility Comment -

Material Comment -

Pothole:

Measurement:

Utility:

Proximity:

Comments: ManHole # 3

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Date	PH	Location	Surface Material	Surface Depth	Base Material	Base Depth
09/25/2023	007A	1111 East Artesia Boulevard, Compton, CA, USA	Other	DIP	None	-

Offset	Utility Type	Material Type	Size	Depth Top	Depth Bottom	Time
-	Sewage	PVC	6"	C-7.60	C-8.10	

Utility Comment -

Material Comment -

Pothole:

Measurement:

Utility:

Proximity:

Comments:

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Date	PH	Location	Surface Material	Surface Depth	Base Material	Base Depth
09/25/2023	Manhole 2	1111 East Artesia Boulevard, Compton, CA, USA	Other	-	None	-

Offset	Utility Type	Material Type	Size	Depth Top	Depth Bottom	Time
-	Other	Other	-	-	-	07:54

Utility Comment -	Material Comment -

Pothole:

Measurement:

Utility:

Proximity:

Comments: Unable to do Manhole #2 because we were not allowed to be on jobsite without permission from superintendent

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Ultra Engineering Contractors, Inc.

31301 Auld Road, Murrieta, CA 92563

1-951-223-3552

Pothole Log Report

for

VCA Engineers, Inc.

Compton

Ultra Engineering Contractors Inc. License # 971768

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Date	PH	Location	Surface Material	Surface Depth	Base Material	Base Depth
04/12/2023	1	In front of Allied health building	Asphalt	6"	Class II	

Offset	Utility Type	Material Type	Size	Depth Top	Depth Bottom	Time
O	Water	Steel	13"	-5.25	-6.33	07:01

Utility Comment	Material Comment

Pothole:

Measurement:

Utility:

Proximity:

Comments:

Ultra Engineering Contractors Inc. License # 971768

Date	PH	Location	Surface Material	Surface Depth	Base Material	Base Depth
04/12/2023	2	In front of instructional building, number one	Soil		None	

Offset	Utility Type	Material Type	Size	Depth Top	Depth Bottom	Time
O	Water	PVC	7" o.d.	-3.40	-3.98	09:24

Utility Comment

Material Comment

Pothole:

Measurement:

Utility:

Proximity:

Comments:

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Date	PH	Location	Surface Material	Surface Depth	Base Material	Base Depth
04/12/2023	2a	In front of instructional building, number one	Soil		None	

Offset	Utility Type	Material Type	Size	Depth Top	Depth Bottom	Time
O	Other	Concrete Case	48"	-4.40	-5.20	

Utility Comment

Material Comment

Pothole:

Measurement:

Utility:

Proximity:

Comments:

Ultra Engineering Contractors Inc. License # 971768

Date	PH	Location	Surface Material	Surface Depth	Base Material	Base Depth
04/12/2023	003	Instructional building one	Soil		None	

Offset	Utility Type	Material Type	Size	Depth Top	Depth Bottom	Time
	Comm.	Concrete	60"	-2.20	-9.00	10:21

Utility Comment

Material Comment

Pothole:

Measurement:

Utility:

Proximity:

Comments:

Ultra Engineering Contractors Inc. License # 971768

Date	PH	Location	Surface Material	Surface Depth	Base Material	Base Depth
04/12/2023	004	Instructional building one	Soil		None	

Offset	Utility Type	Material Type	Size	Depth Top	Depth Bottom	Time
	Electric	Concrete	60"	-2.40	-9.90	11:09

Utility Comment

Material Comment

Pothole:

Measurement:

Utility:

Proximity:

Comments:

Ultra Engineering Contractors Inc. License # 971768

Date	PH	Location	Surface Material	Surface Depth	Base Material	Base Depth
04/12/2023	5	Near Lot F	Other		None	

Offset	Utility Type	Material Type	Size	Depth Top	Depth Bottom	Time
O	Sewage	Steel	6"	-5.00	-5.50	11:44

Utility Comment

Material Comment

Pothole:

Measurement:

Utility:

Proximity:

Comments:

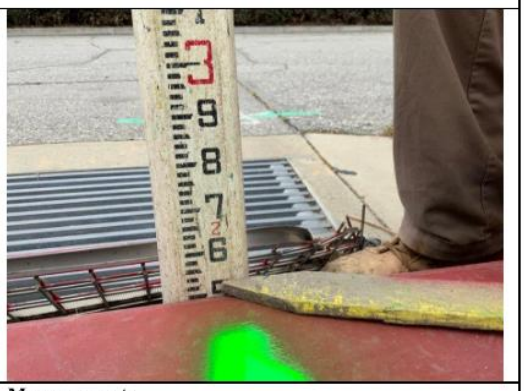
Ultra Engineering Contractors Inc. License # 971768

Date	PH	Location	Surface Material	Surface Depth	Base Material	Base Depth
04/12/2023	6	In front of F building	Other		None	

Offset	Utility Type	Material Type	Size	Depth Top	Depth Bottom	Time
O	Sewage	PVC	12"	-2.50	-3.50	12:41

Utility Comment

Material Comment



Pothole:

Measurement:

Utility:

Proximity:

Comments:

Ultra Engineering Contractors Inc. License # 971768

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Date	PH	Location	Surface Material	Surface Depth	Base Material	Base Depth
04/12/2023	7	Building F	Other		None	

Offset	Utility Type	Material Type	Size	Depth Top	Depth Bottom	Time
O	Sewage	VCP	6"	-5.10	-5.60	12:15

Utility Comment

Material Comment

Pothole:

Measurement:

Utility:

Proximity:

Comments:

Ultra Engineering Contractors Inc. License # 971768

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Date	PH	Location	Surface Material	Surface Depth	Base Material	Base Depth
04/12/2023	8	In front of student services	Other		None	

Offset	Utility Type	Material Type	Size	Depth Top	Depth Bottom	Time
O	Sewage	VCP	6"	-5.60	-6.10	12:26

Utility Comment

Material Comment

Pothole:

Measurement:

Utility:

Proximity:

Comments:

Ultra Engineering Contractors Inc. License # 971768

Los Angeles
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APPENDIX E

ADDITIONAL MANHOLE RIM ELEVATION SURVEY

Los Angeles
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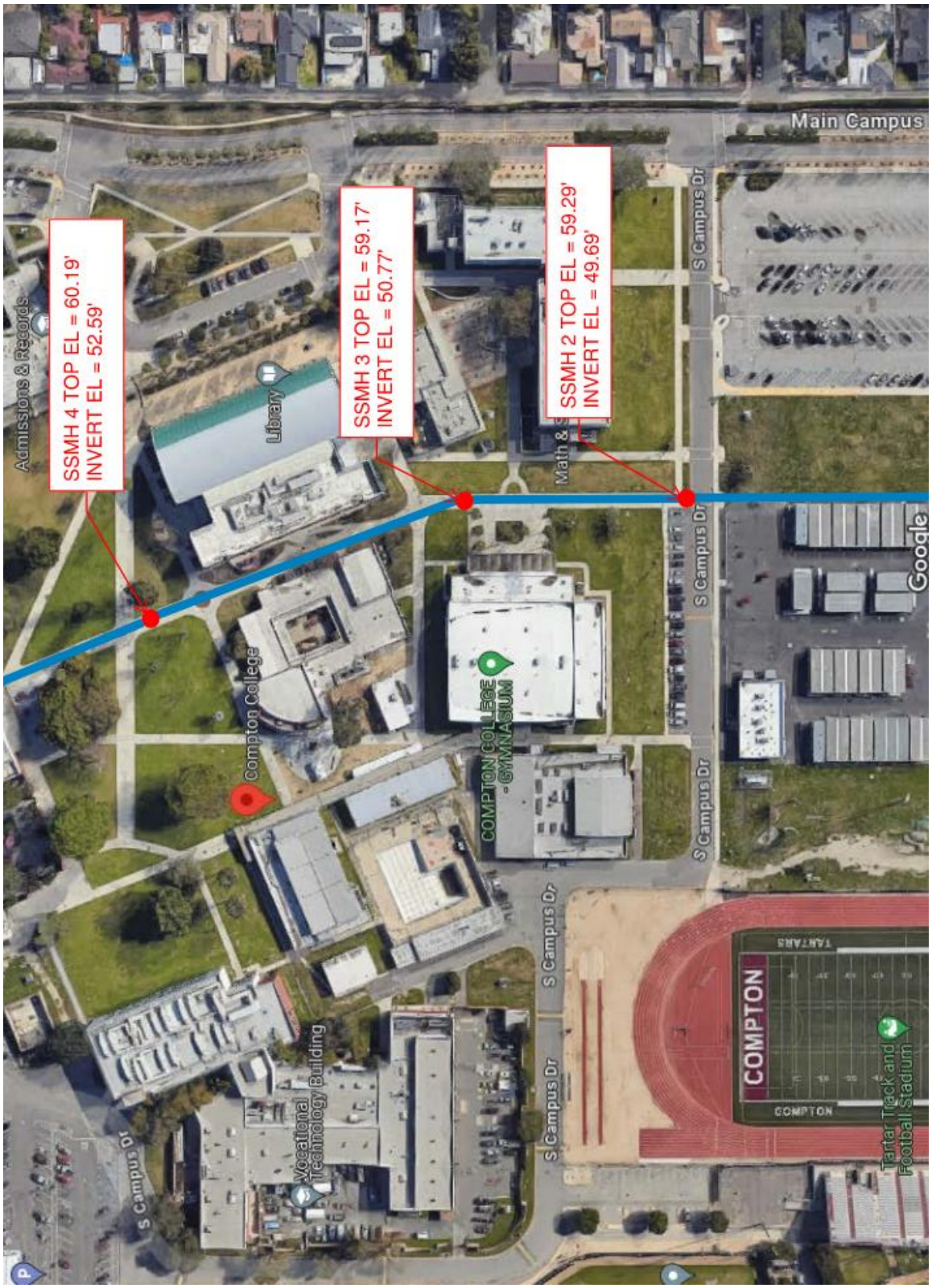

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APPENDIX F

UTILITY INFRASTRUCTURE-PHASE 1 SET DRAWINGS

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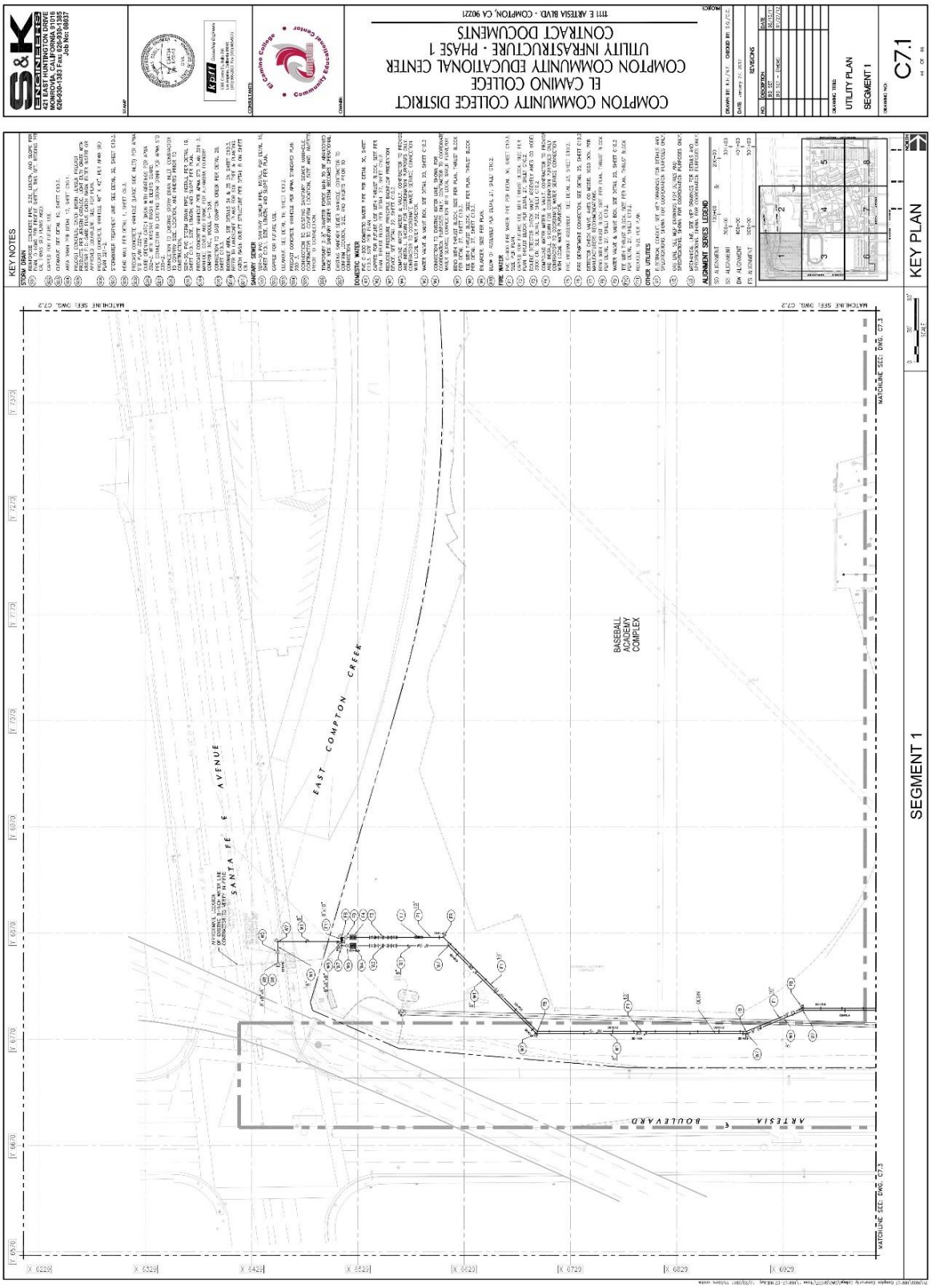

Los Angeles
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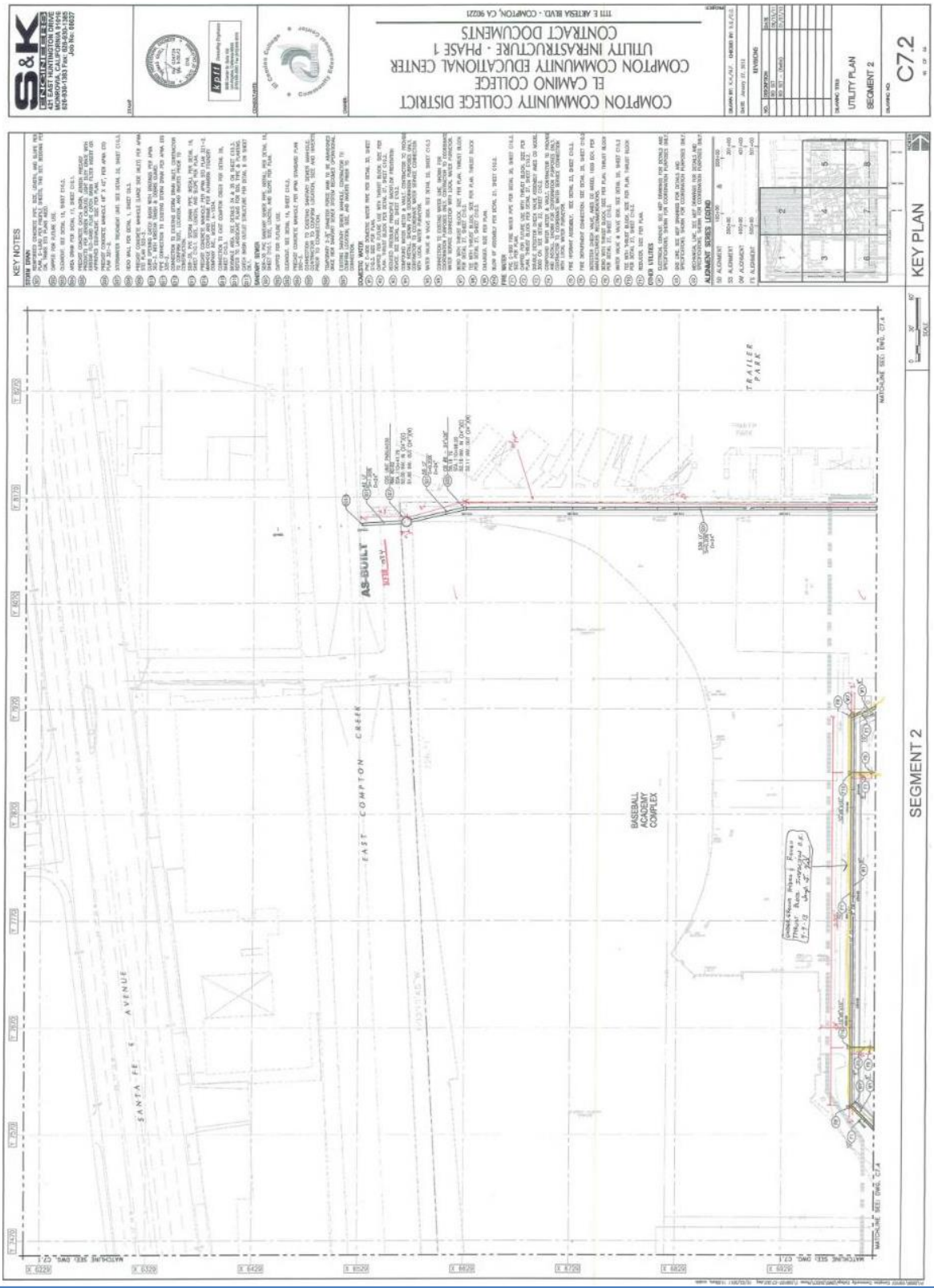

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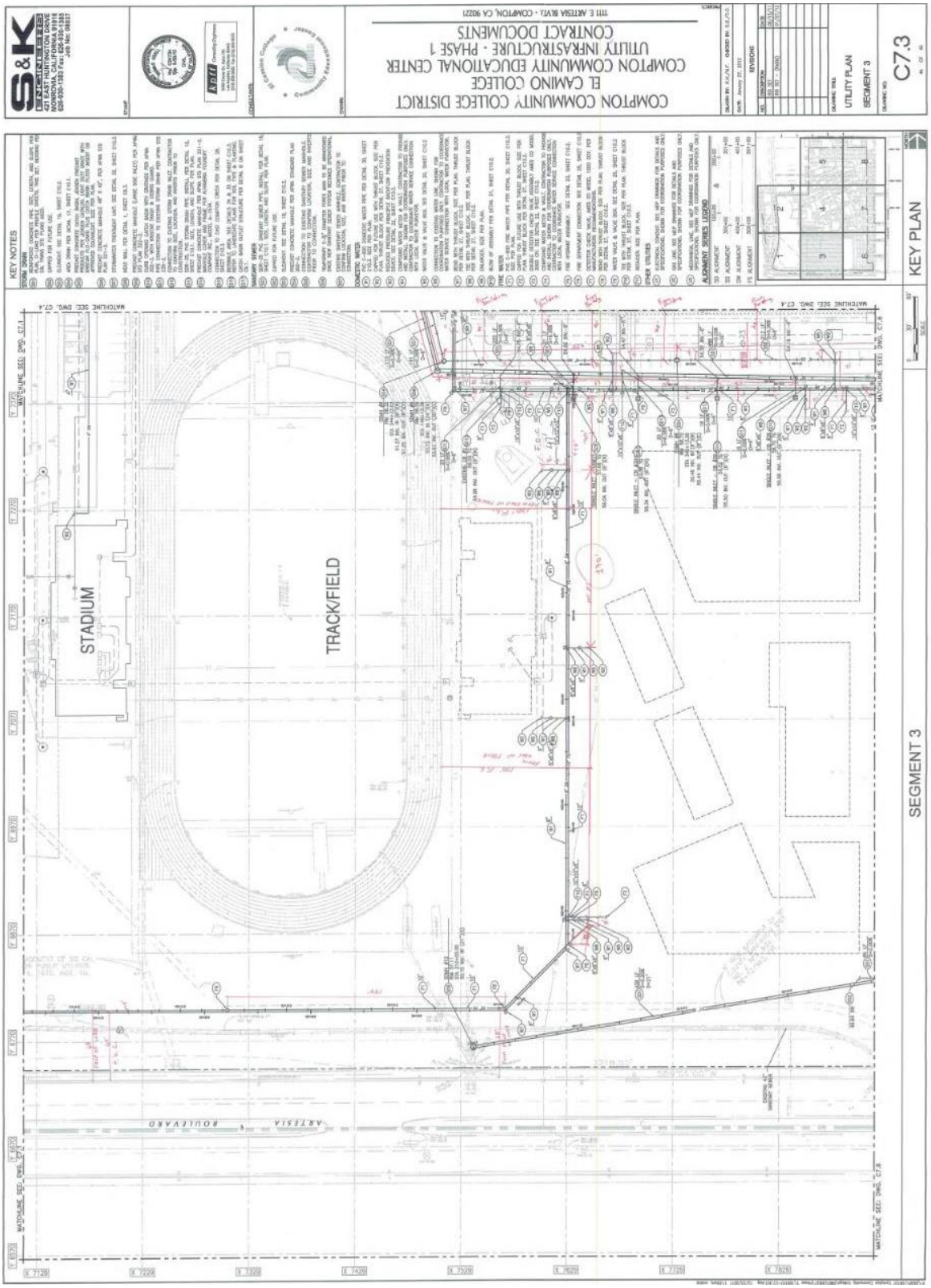

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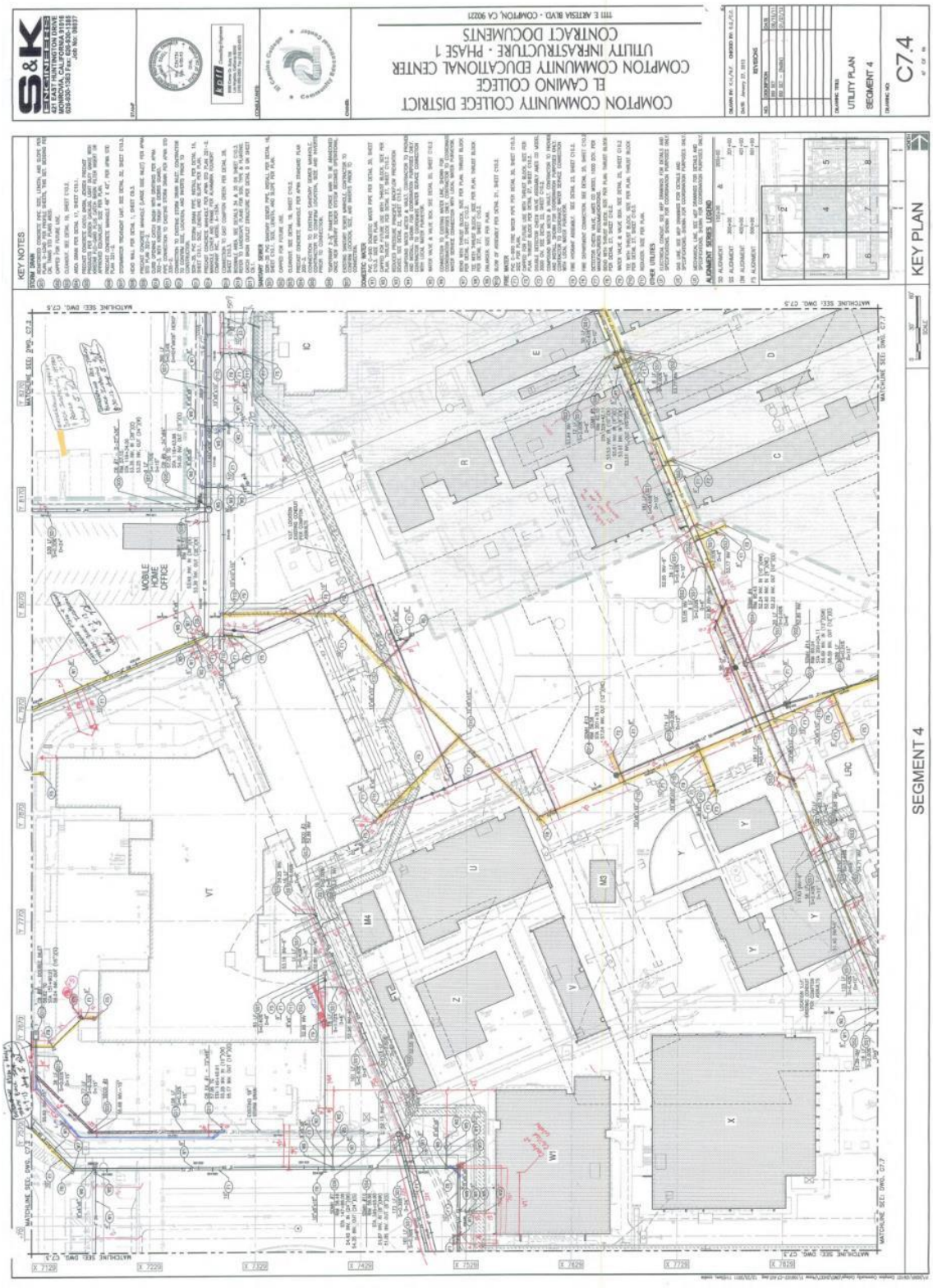

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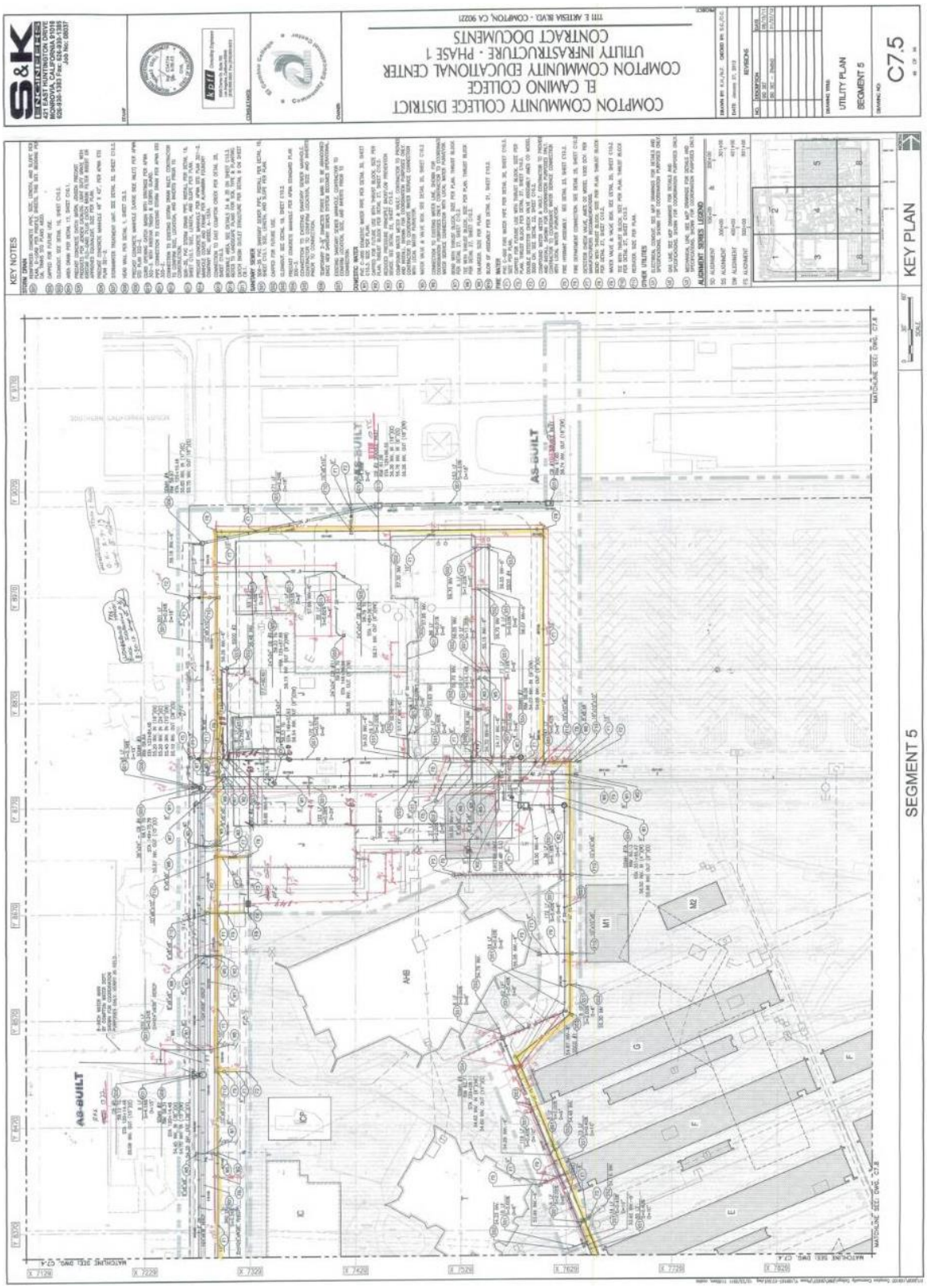

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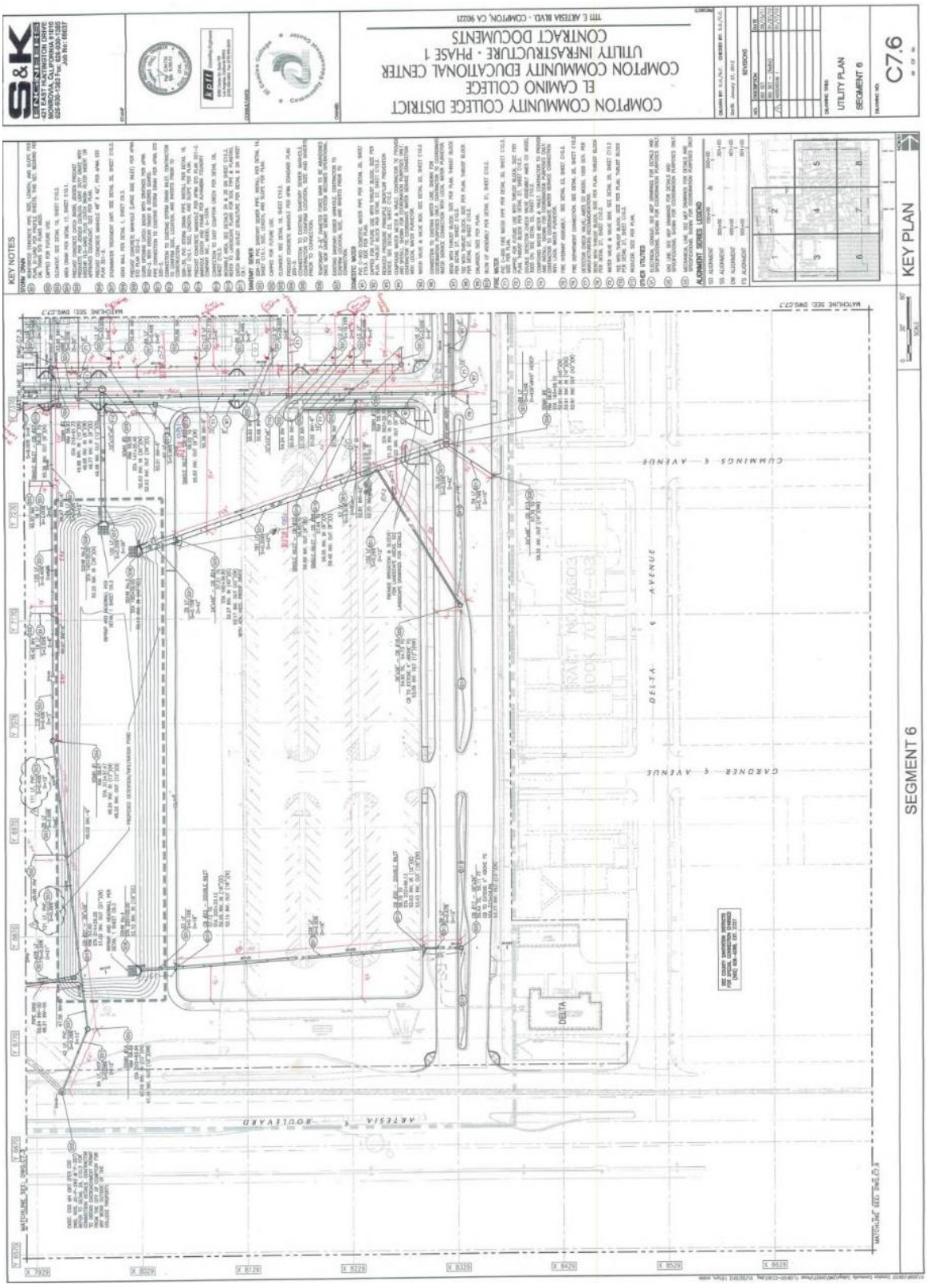

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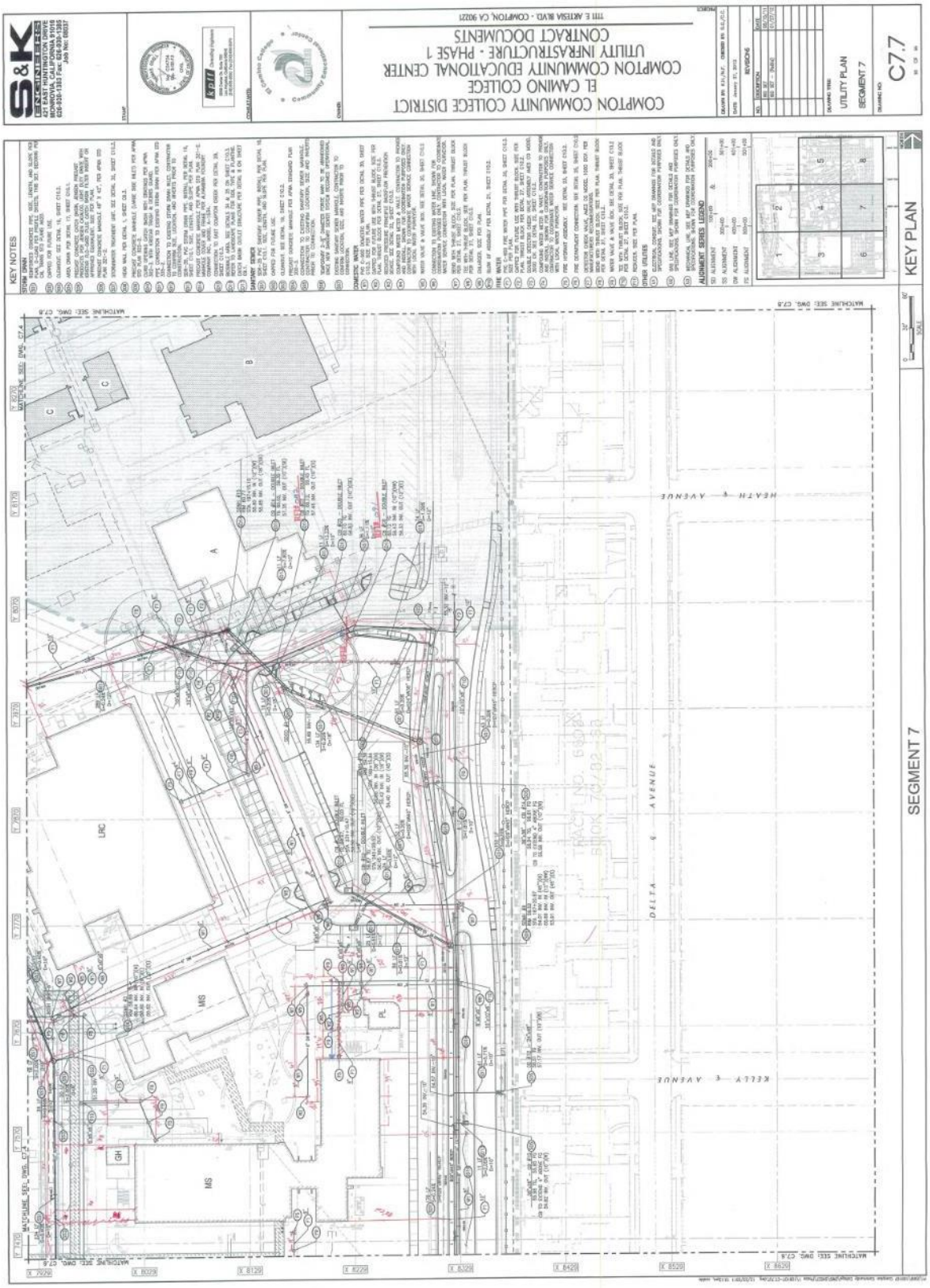

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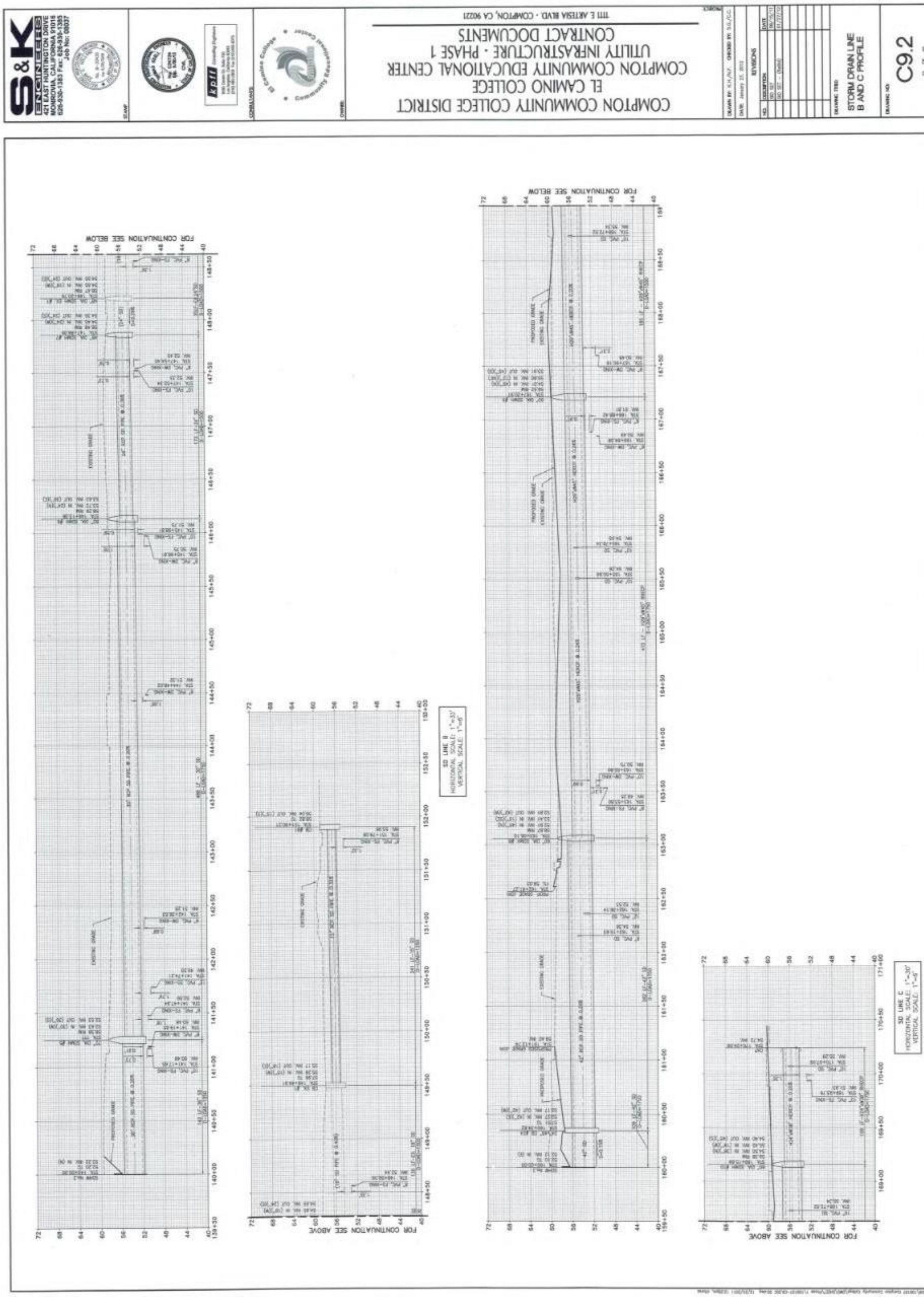

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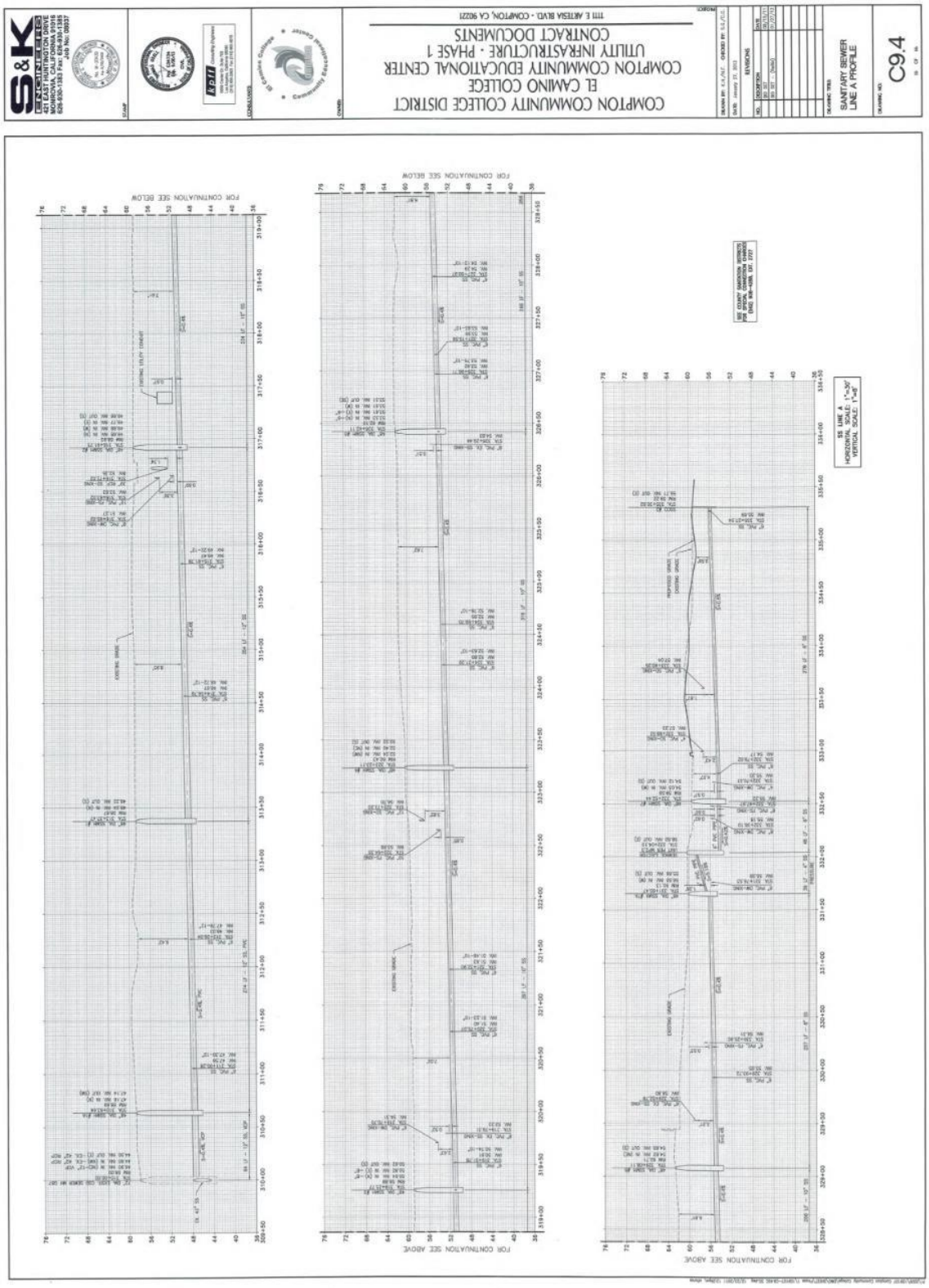

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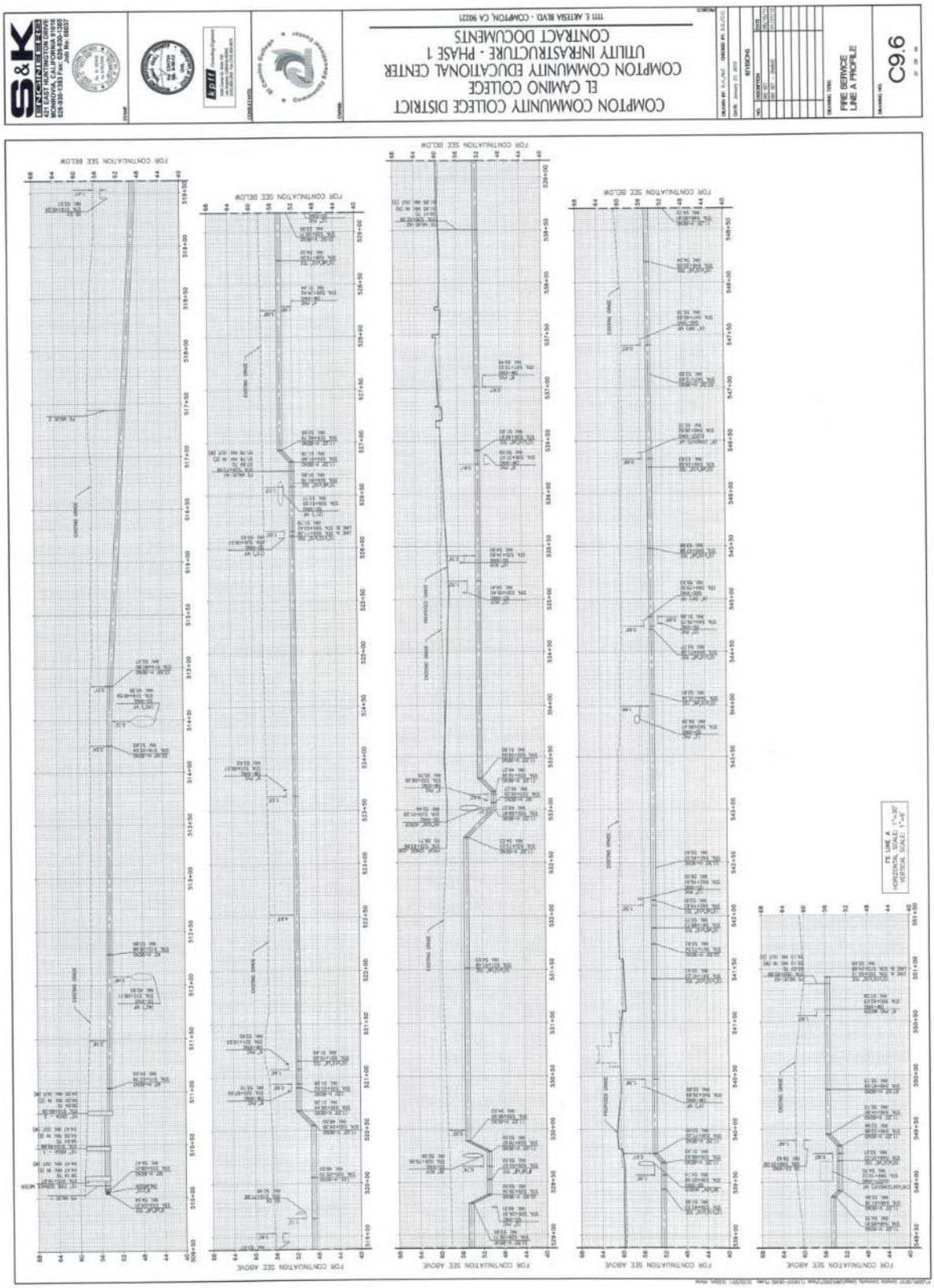

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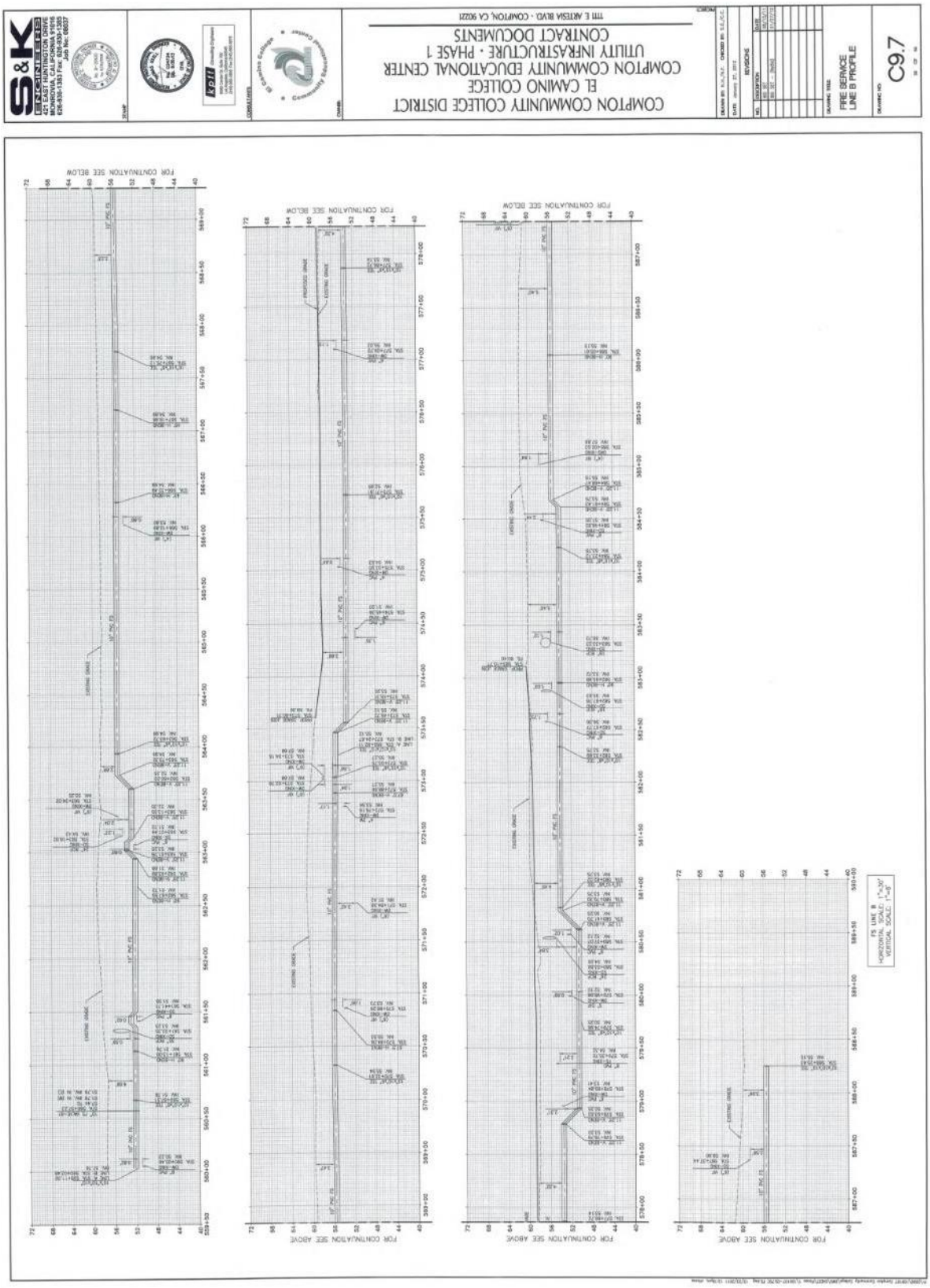

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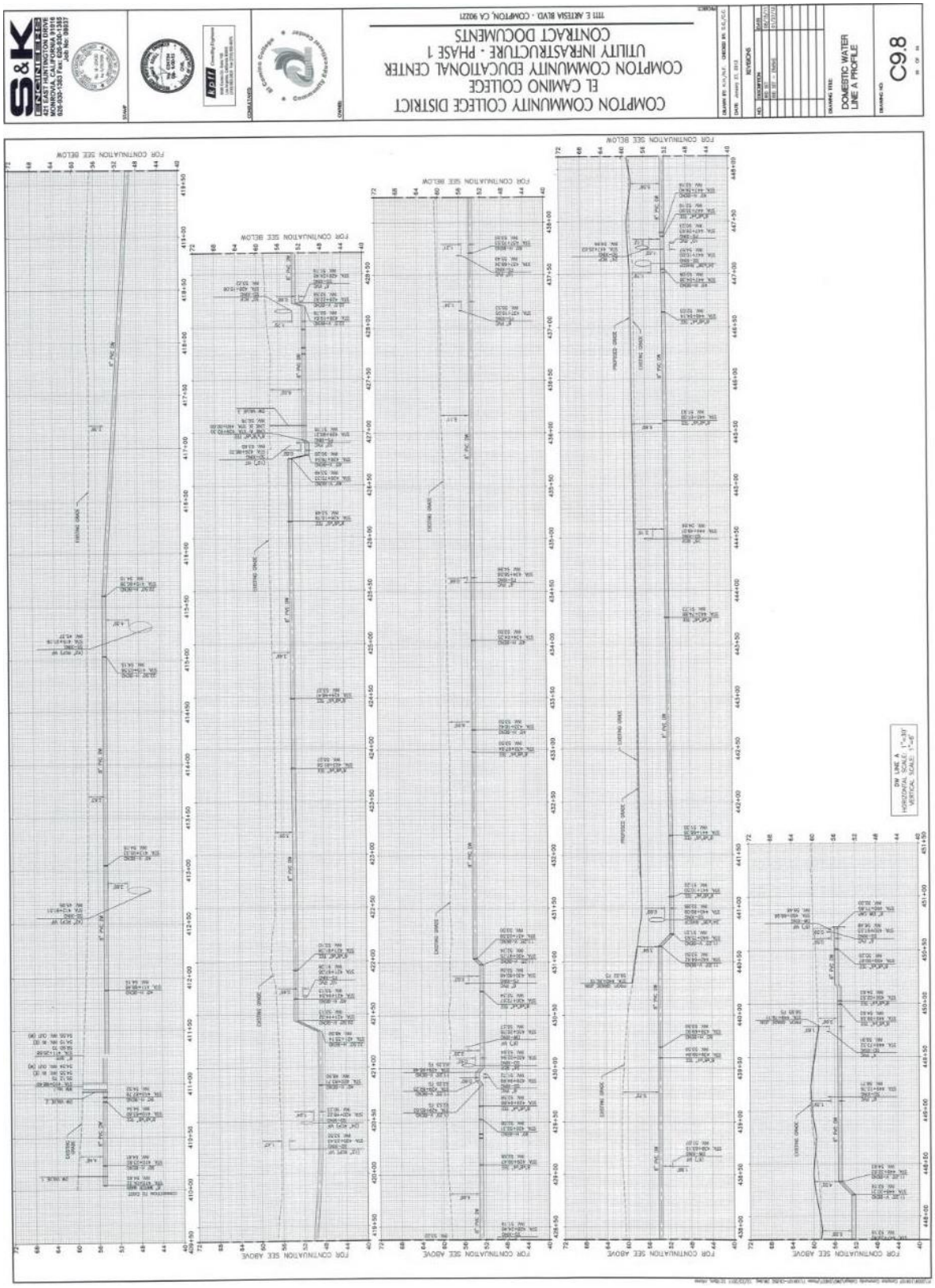

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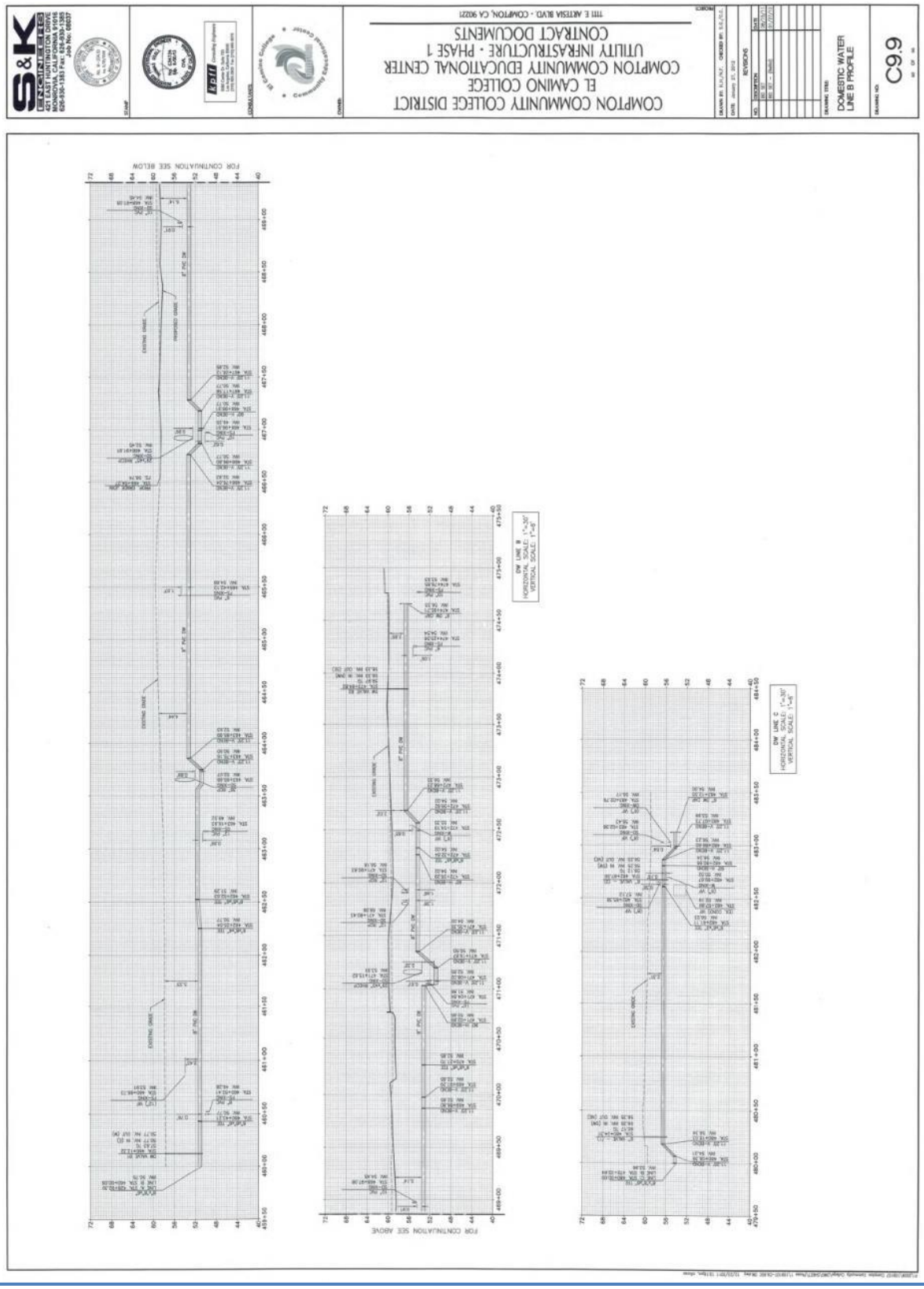

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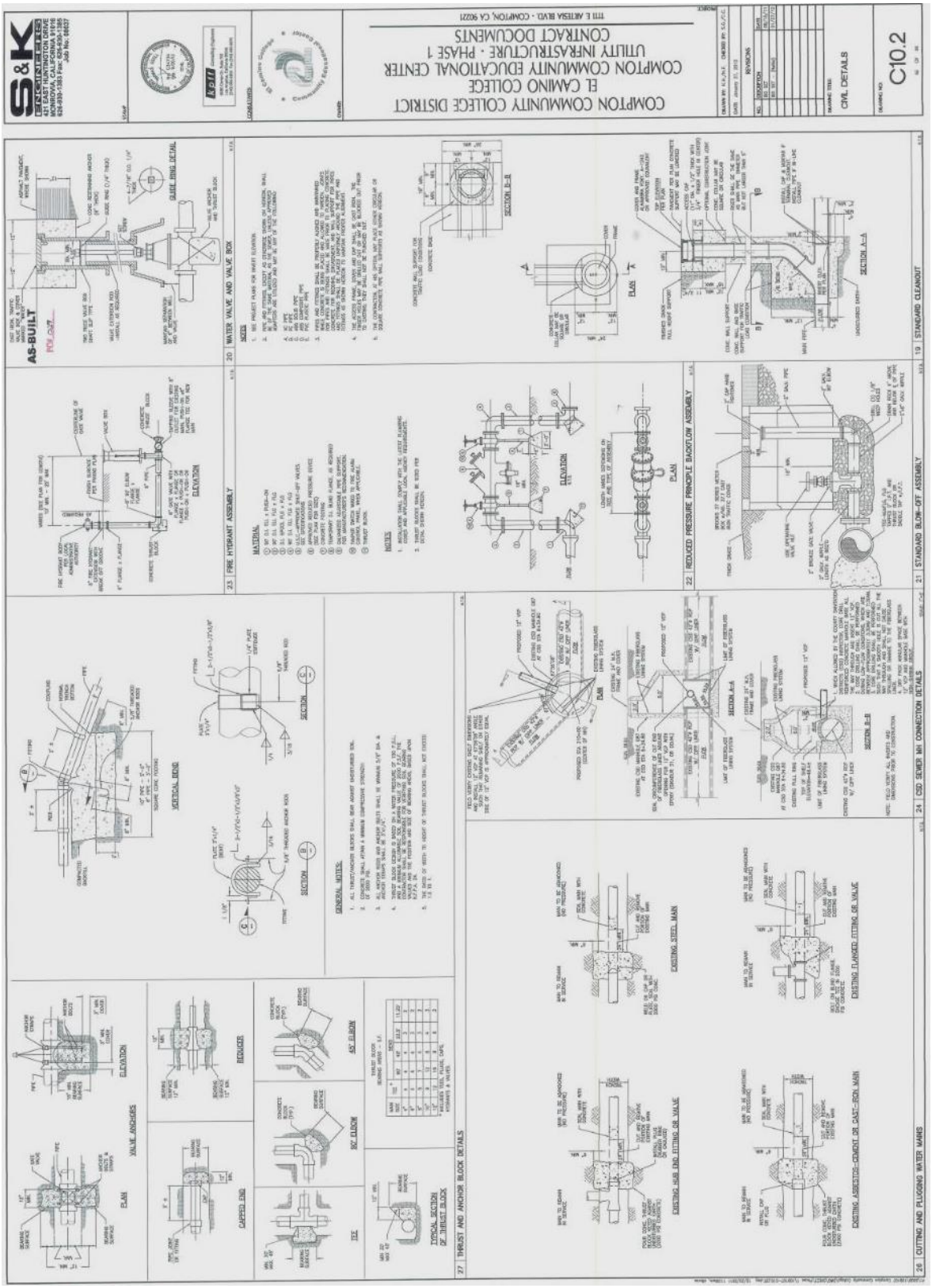

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APPENDIX G

PROFILE OF LINE B

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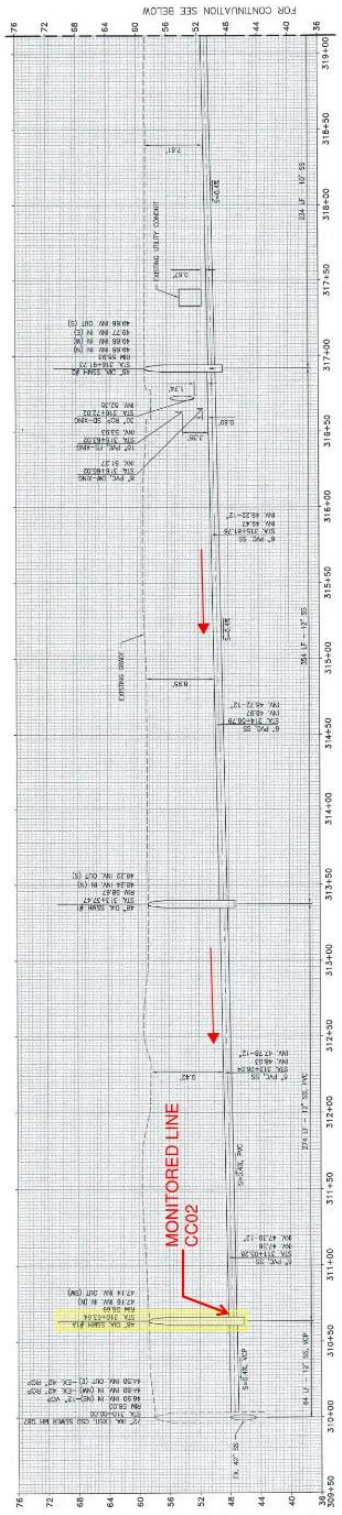

LINE B PROFILE

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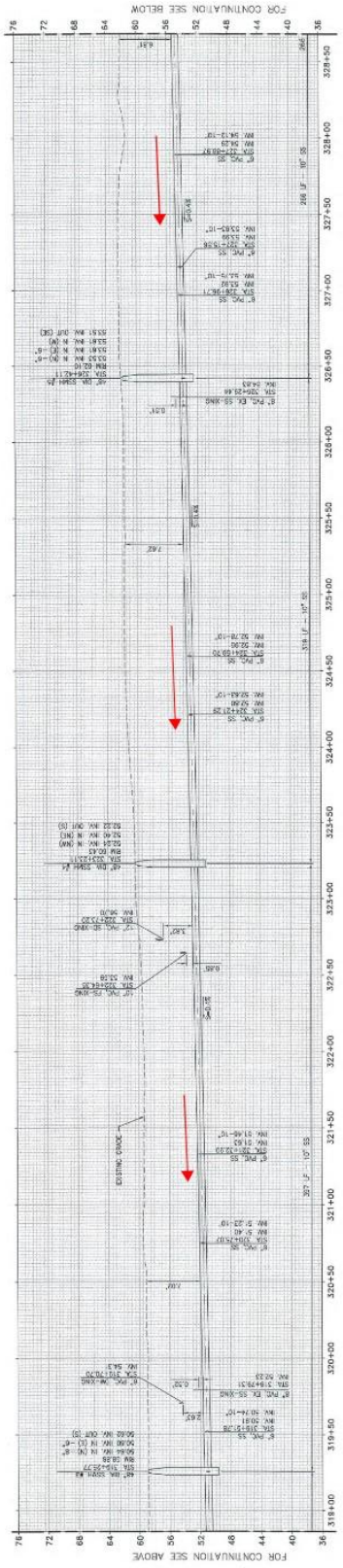

LINE B PROFILE

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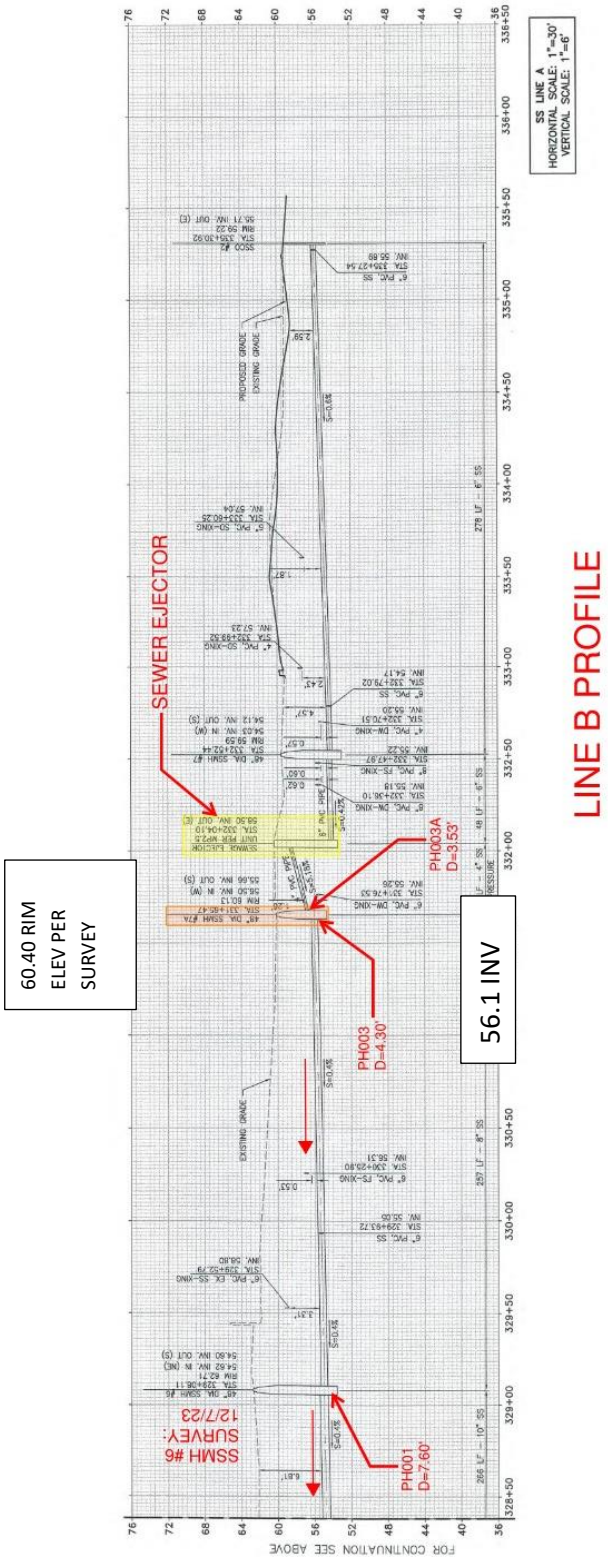

LINE B PROFILE

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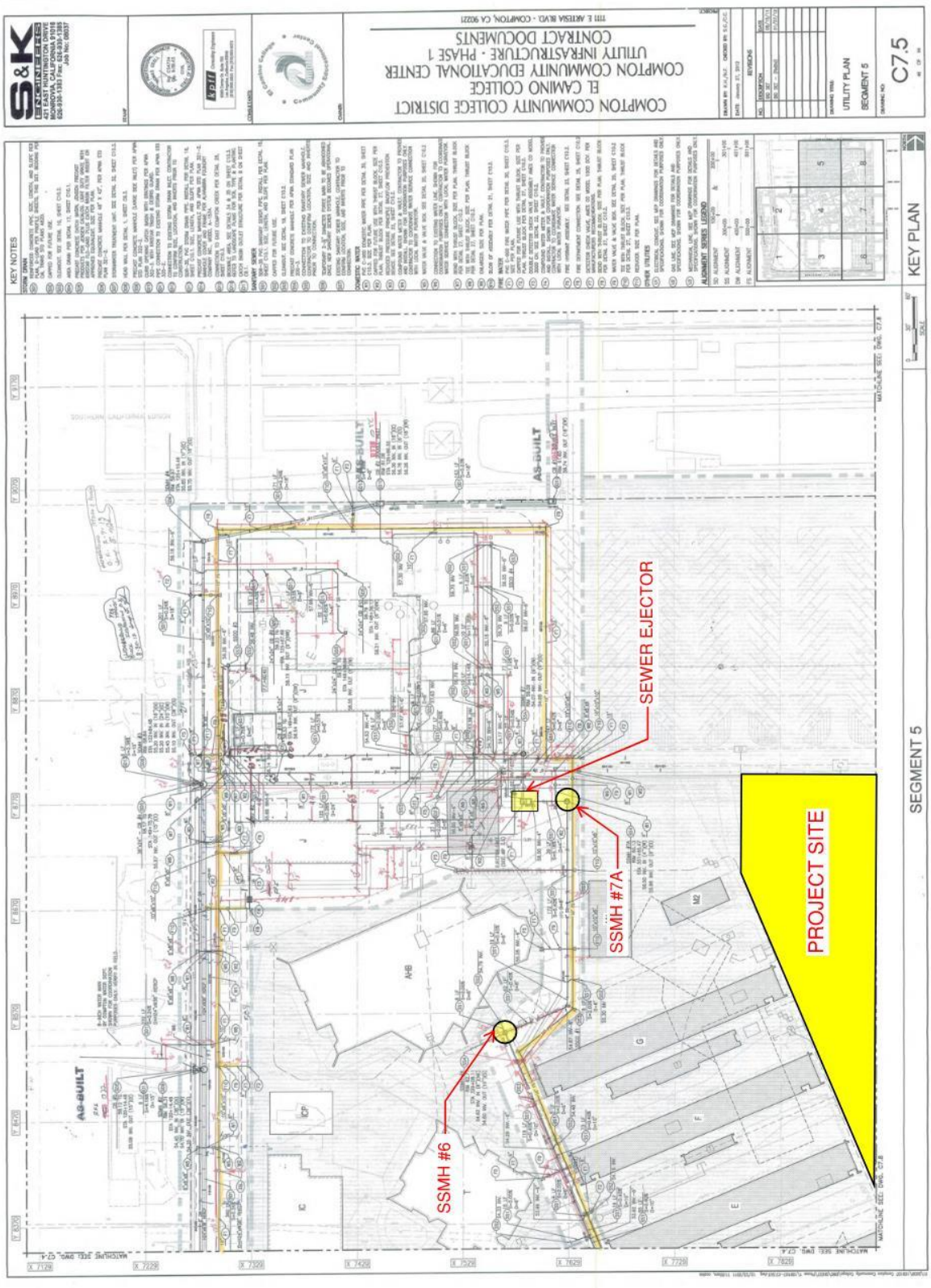

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APPENDIX H

7 DAYS MONITORING FLOW STUDY

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CC01N

Site Commentary

SITE INFORMATION

Pipe	Round (8 in H)
Silt	0.00 (in)

OBSERVATIONS

5-minute flow depth, velocity, and quantity data observed during **Monday, 03 April 2023 to Monday, 10 April 2023**, along with observed minimum and maximum data, are provided in the following table.

The data for this site is of lower than typical accuracy due to the very low flows observed. This site often operated below detection limits for the flow monitor.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	0.12	0.00	0.000
Minimum	0.00	0.00	0.000
Maximum	0.95	0.00	0.000
Min Time	04/10/2023 9:00:00 AM	04/10/2023 11:45:00 PM	04/10/2023 11:45:00 PM
Max Time	04/10/2023 12:30:00 PM	04/03/2023 12:00:00 AM	04/03/2023 12:00:00 AM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions table are based on the five minutes average and data on the graphical reports are based on the fifteen minutes average.

DATA UPTIME

Data uptime observed during **Monday, 03 April 2023 to Monday, 10 April 2023** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

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ADS ENVIRONMENTAL SERVICES

ADS Site Report

Quality Form

Project Name:	ComptonCol.VCA.TFM.CA22	**City:** Compton	**Agency:** Compton	**FM Initials:** VM	
Site Name:	CC01N	**Install Date:** 3/31/23	**Monitor Type**	Peak Doppler	
Address/Location:	1111 E Artesia Blvd, Compton, CA 90221		**Monitor Model**	Triton +	
			Data Acquisition	Manual/Wireless Collect	
			Manhole ID	Unknown	
Access: Drive	**Type of System:**	Sanitary [X] Storm [ ] Combined [ ]	**Pipe Height:**	8.00 "	
			Pipe Width:	8.00 "	

Investigation Information:

Date/Time of Investigation:	03/27/23 @ 7:25 AM
Site Hydraulics:	Low/Dry straight flow
Upstream Input: (L/S, P/S)	--
Upstream Manhole:	Not Investigated
Downstream Manhole:	Not investigated
Depth of Flow:	0.00 " +/- 0.25"
Range (Air DOF):	+/-
Peak Velocity:	0.00 fps
Silt:	0 Inches

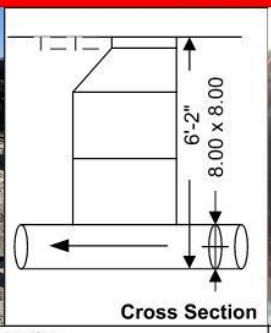
Manhole Information:

Manhole Depth:	6'-2"			
Manhole Material / Condition	Brick/Good			
Pipe Material / Condition:	VCP/Good			
Land Use:	Residential [ ]	Commercial [ ]	Industrial [ ]	Other [x]
Oxygen: 20.9	**H2S:** 0	**LEL:** 0	**CO:** 0	

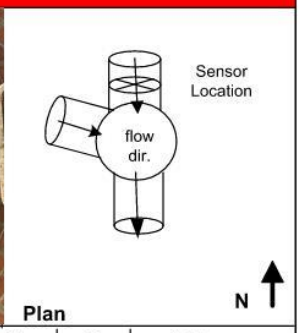
Safety Notes:

2 man crew required and one blower is to be operated at all times.

Other Information:



Cross Section



Plan

Installation Information		Backup	Yes	No	?	Distance
Installation Type:	Standard	Trunk	[ ]	[x]	[ ]	
Sensors Devices:	Ultrasonic/Velocity/Pressure	Lift / Pump Station	[ ]	[x]	[ ]	
Surcharge Height:	0	WWTP	[ ]	[x]	[ ]	
Rain Gauge Zone:		Other	[ ]	[X]	[ ]	

Additional Site Information / Comments:

Standard Traffic Control with No Safety Concerns

7

CC01W

Site Commentary

SITE INFORMATION

Pipe	Elliptical (5.88 in H x 6 in W)
Silt	0.00 (in)

OBSERVATIONS

5-minute flow depth, velocity, and quantity data observed during **Monday, 03 April 2023 to Monday, 10 April 2023**, along with observed minimum and maximum data, are provided in the following table.

The data for this site is of lower than typical accuracy due to the very low flows observed. This site often operated near lower detection limits for the flow monitor.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	0.27	0.23	0.001
Minimum	0.12	0.08	0.000
Maximum	1.00	1.00	0.011
Min Time	04/08/2023 2:00:00 PM	04/08/2023 2:00:00 PM	04/08/2023 2:00:00 PM
Max Time	04/10/2023 12:15:00 PM	04/07/2023 1:00:00 PM	04/10/2023 12:15:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions table are based on the five minutes average and data on the graphical reports are based on the fifteen minutes average.

DATA UPTIME

Data uptime observed during **Monday, 03 April 2023 to Monday, 10 April 2023** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

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ADS ENVIRONMENTAL SERVICES

ADS Site Report

Quality Form

Project Name:	ComptonCol.VCA.TFM.CA22	**City:** Compton	**Agency:** Compton	**FM Initials:** VM	
Site Name:	CC01W	**Install Date:** 3/31/23	**Monitor Type**	Peak Doppler	
Address/Location:	1111 E Artesia Blvd, Compton, CA 90221		**Monitor Model**	Triton +	
			Data Acquisition	Manual/Wireless Collect	
			Manhole ID	Unknown	
Access: Drive	**Type of System:**	Sanitary [X] Storm [ ] Combined [ ]	**Pipe Height:**	5.88 "	
			Pipe Width:	6.00 "	

Investigation Information:

Date/Time of Investigation:	03/27/23 @ 7:25 AM
Site Hydraulics:	Low/Dry curved flow
Upstream Input: (L/S, P/S)	--
Upstream Manhole:	Not Investigated
Downstream Manhole:	Not investigated
Depth of Flow:	0.13 " +/- 0.25"
Range (Air DOF):	+/-
Peak Velocity:	0.00 fps
Silt:	0 Inches

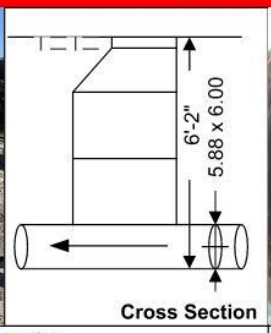
Manhole Information:

Manhole Depth:	6'-2"			
Manhole Material / Condition	Brick/Good			
Pipe Material / Condition:	VCP/Good			
Land Use:	Residential [ ]	Commercial [ ]	Industrial [ ]	Other [x]
Oxygen: 20.9	**H2S:** 0	**LEL:** 0	**CO:** 0	

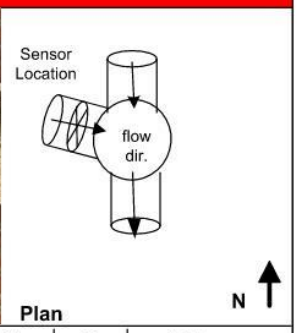
Safety Notes:

2 man crew required and one blower is to be operated at all times.

Other Information:



Cross Section



Plan

Installation Information		Backup	Yes	No	?	Distance
Installation Type:	Standard	Trunk	[ ]	[x]	[ ]	
Sensors Devices:	Ultrasonic/Velocity/Pressure	Lift / Pump Station	[ ]	[x]	[ ]	
Surcharge Height:	0	WWTP	[ ]	[x]	[ ]	
Rain Gauge Zone:		Other	[ ]	[X]	[ ]	

Additional Site Information / Comments:

Standard Traffic Control with No Safety Concerns

12

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CC02

Site Commentary

SITE INFORMATION

Pipe	Elliptical (11.88 in H x 11.5 in W)
Silt	0.00 (in)

OBSERVATIONS

5-minute flow depth, velocity, and quantity data observed during **Monday, 03 April 2023 to Monday, 10 April 2023**, along with observed minimum and maximum data, are provided in the following table.

The data for this site is of lower than typical accuracy due to the very low flows observed. This site often operated near lower detection limits for the flow monitor.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	0.53	0.43	0.004
Minimum	0.18	0.14	0.000
Maximum	1.36	1.23	0.023
Min Time	04/09/2023 5:30:00 AM	04/03/2023 4:15:00 AM	04/08/2023 2:15:00 AM
Max Time	04/07/2023 11:45:00 AM	04/08/2023 2:45:00 AM	04/08/2023 2:45:00 AM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions table are based on the five minutes average and data on the graphical reports are based on the fifteen minutes average.

DATA UPTIME

Data uptime observed during **Monday, 03 April 2023 to Monday, 10 April 2023** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

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ADS Site Report

Quality Form

Project Name:	ComptonCol.VCA.TFM.CA22	**City:** Compton	**Agency:** Compton	**FM Initials:** VM	
Site Name:	CC02	**Install Date:** 3/31/23	**Monitor Type**	Peak Doppler	
Address/Location:	1111 E Artesia Blvd, Compton, CA 90221		**Monitor Model**	Triton +	
			Data Acquisition	Manual/Wireless Collect	
			Manhole ID	Unknown	
Access: Drive	**Type of System:**	Sanitary [X] Storm [ ] Combined [ ]	**Pipe Height:**	11.88 "	
			Pipe Width:	11.50 "	

Investigation Information:

Date/Time of Investigation:	03/27/23 @ 7:25 AM
Site Hydraulics:	Low straight flow
Upstream Input: (L/S, P/S)	--
Upstream Manhole:	Not Investigated
Downstream Manhole:	Not investigated
Depth of Flow:	1.25 " +/- 0.25"
Range (Air DOF):	+/-
Peak Velocity:	0.00 fps
Silt:	0 Inches

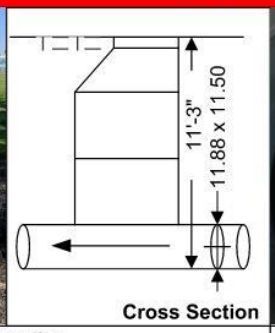
Manhole Information:

Manhole Depth:	11'-3"						
Manhole Material / Condition	Precast/Good						
Pipe Material / Condition:	VCP/Good						
Land Use:	Residential [ ]	Commercial [ ]	Industrial [ ]	Other [x]			
Oxygen: 20.9	**H2S:** 0	**LEL:** 0	**CO:** 0				

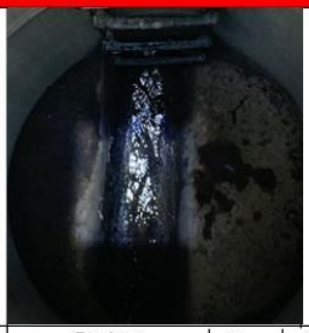
Safety Notes:

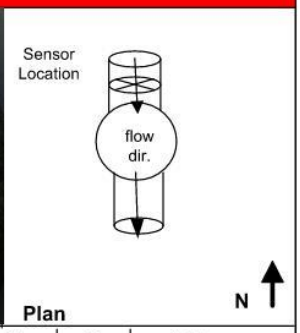
2 man crew required and one blower is to be operated at all times.

Other Information:



Cross Section





Plan

Installation Information		Backup	Yes	No	?	Distance
Installation Type:	Standard	Trunk	[ ]	[x]	[ ]	
Sensors Devices:	Ultrasonic/Velocity/Pressure	Lift / Pump Station	[ ]	[x]	[ ]	
Surcharge Height:	0	WWTP	[ ]	[x]	[ ]	
Rain Gauge Zone:		Other	[ ]	[X]	[ ]	

Additional Site Information / Comments:

Standard Traffic Control with No Safety Concerns

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APPENDIX I

14 DAYS MONITORING FLOW STUDY

CC02

Site Commentary

SITE INFORMATION

Pipe	Elliptical (11.88 in H x 11.5 in W)
Silt	0.00 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Thursday, 19 October 2023 to Wednesday, 01 November 2023**, along with observed minimum and maximum data, are provided in the following table.

Site operated at an average depth of 1.2 inches, however on 10/31/23 at 4pm for about an hour depth was within 1.5 inches of full pipe. This was most likely caused by debris settling in the line temporarily causing backwater conditions. Site resumed normal free flow conditions around 4:50pm. Average velocity at this location operates very close to the lower detection limit at 0.25 ft/s. Average flow is around 0.006 MGD and registering 0 or undetectable for much of the period. Data accuracy is lower than typical because of the low flow and slow conditions in these pipes.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	1.18	0.27	0.006
Minimum	0.39	0.00	0.000
Maximum	10.63	1.75	0.105
Min Time	10/21/2023 4:55:00 AM	11/01/2023 10:55:00 PM	11/01/2023 10:55:00 PM
Max Time	10/31/2023 4:50:00 PM	10/26/2023 1:20:00 PM	10/30/2023 9:15:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions table are based on the five minute average and data on the graphical reports are based on the fifteen minute average.

DATA UPTIME

Data uptime observed during **Thursday, 19 October 2023 to Wednesday, 01 November 2023** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

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ADS Site Report

Quality Form

Project Name: ComptonCol.VCA.2TFM.CA22	**City:** Compton	**Agency:** Compton	**FM Initials:** VM
Site Name: CC02	**Install Date:** 10/18/2023	**Monitor Type**	Peak Doppler
Address/Location: 1111 E Artesia Blvd, Compton, CA 90221		**Monitor Model**	Triton +
		Data Acquisition	Manual/Wireless Collect
		Manhole ID	Unknown
Access: Drive	**Type of System:** Sanitary [X] Storm [ ] Combined [ ]	**Pipe Height:**	11.88 "
		Pipe Width:	11.50 "

Investigation Information:

Date/Time of Investigation:	10/11/2023 @ 6:25 AM
Site Hydraulics:	Low straight flow
Upstream Input: (L/S, P/S)	--
Upstream Manhole:	Not Investigated
Downstream Manhole:	Not investigated
Depth of Flow:	0.88 " +/- 0.25"
Range (Air DOF):	+/-
Peak Velocity:	0.00 fps
Silt:	0 Inches

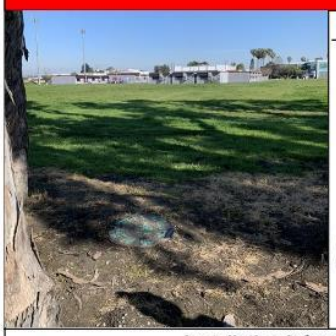
Manhole Information:

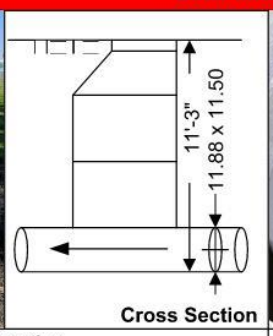
Manhole Depth:	11'-3"						
Manhole Material / Condition	Precast/Good						
Pipe Material / Condition:	VCP/Good						
Land Use:	Residential [ ]	Commercial [ ]	Industrial [ ]	Other [x]			
Oxygen: 20.9	**H2S:** 0	**LEL:** 0	**CO:** 0				

Safety Notes:

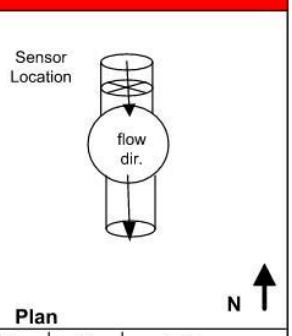
2 man crew required and one blower is to be operated at all times.

Other Information:





Cross Section



Plan

Installation Information		Backup	Yes	No	?	Distance
Installation Type:	Standard	Trunk	[ ]	[x]	[ ]	
Sensors Devices:	Ultrasonic/Velocity/Pressure	Lift / Pump Station	[ ]	[x]	[ ]	
Surcharge Height:	0	WWTP	[ ]	[x]	[ ]	
Rain Gauge Zone:		Other	[ ]	[x]	[ ]	

Additional Site Information / Comments:

Standard Traffic Control with No Safety Concerns

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CC03N

Site Commentary

SITE INFORMATION

Pipe	Round (10 in H)
Silt	0.00 (in)

OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Thursday, 19 October 2023 to Wednesday, 01 November 2023**, along with observed minimum and maximum data, are provided in the following table.

This site operates at mostly below 0.5 inches of water with a max 5 min. depth of 1.5 inches and a max hourly depth of 0.8 inches. Average velocity at this location is about 0.30 ft/s which is close to detection limits. Average flow is about 0.001 MGD and registering 0 or undetectable for much of the period. Data accuracy is lower than typical because of the low flow and slow conditions in these pipes.

Observed Flow Conditions			
Item	**DFINAL (in)**	**VFINAL (ft/s)**	**QFINAL (MGD - Total MG)**
Average	0.18	0.28	0.001
Minimum	0.00	0.00	0.000
Maximum	1.53	1.68	0.057
Min Time	11/01/2023 8:40:00 PM	11/01/2023 11:55:00 PM	11/01/2023 11:55:00 PM
Max Time	10/24/2023 2:40:00 PM	10/27/2023 8:25:00 AM	10/24/2023 2:40:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions table are based on the five minute average and data on the graphical reports are based on the fifteen minute average.

DATA UPTIME

Data uptime observed during **Thursday, 19 October 2023 to Wednesday, 01 November 2023** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100
QFINAL (MGD - Total MG)	100

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ADS Site Report

Quality Form

Project Name: ComptonCol.VCA.2TFM.CA22	**City:** Compton	**Agency:** Compton	**FM Initials:** VM
Site Name: CC03N	**Install Date:** 10/18/2023	**Monitor Type**	Peak Doppler
Address/Location: 1111 E Artesia Blvd, Compton, CA 90221		**Monitor Model**	Triton +
		Data Acquisition	Manual/Wireless Collect
		Manhole ID	Unknown
Access: Drive	**Type of System:** Sanitary [X] Storm [ ] Combined [ ]	**Pipe Height:**	10.00 "
		Pipe Width:	10.00 "

Investigation Information:

Date/Time of Investigation:	10/11/2023 @ 6:25 AM
Site Hydraulics:	Low straight flow
Upstream Input: (L/S, P/S)	--
Upstream Manhole:	Not Investigated
Downstream Manhole:	Not investigated
Depth of Flow:	0.88 " +/- 0.25"
Range (Air DOF):	+/-
Peak Velocity:	1.10 fps
Silt:	0 Inches

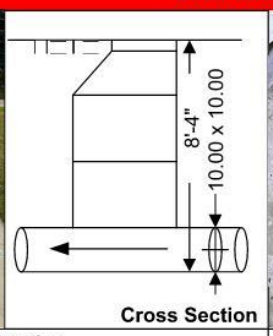
Manhole Information:

Manhole Depth:	8'-4"						
Manhole Material / Condition	Precast/Good						
Pipe Material / Condition:	VCP/Good						
Land Use:	Residential [ ]	Commercial [ ]	Industrial [ ]	Other [x]			
Oxygen: 20.9	**H2S:** 0	**LEL:** 0	**CO:** 0				

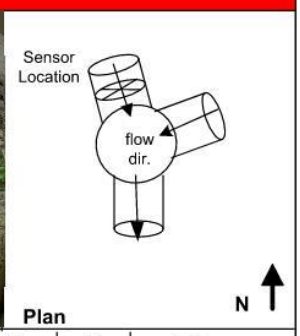
Safety Notes:

2 man crew required and one blower is to be operated at all times.

Other Information:



Cross Section



Plan

Installation Information		Backup	Yes	No	?	Distance
Installation Type:	Standard	Trunk	[ ]	[x]	[ ]	
Sensors Devices:	Ultrasonic/Velocity/Pressure	Lift / Pump Station	[ ]	[x]	[ ]	
Surcharge Height:	0	WWTP	[ ]	[x]	[ ]	
Rain Gauge Zone:		Other	[ ]	[x]	[ ]	

Additional Site Information / Comments:

Standard Traffic Control with No Safety Concerns

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APPENDIX J

EXISITNG SEWER PIPE CALCULATIONS

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Exisitng Pipe Capacity at Monitored Manhole			LINE A		LINE B		
Existing Sewer Pipe Capacity at d/D=0.50	**Factors**	**Units**	**Manhole 1**		**Manhole 2**		**Manhole 3**
			CC01N	CC01W	CC02 OLD	CC02 NEW	CC03N
Monitored Peak Flow	Q_P	cfs	0.00	0.02	0.04	0.16	0.09
Factored Peak Flow (Monitored Peak Flow*2.5)	Q_M	cfs	0.00	0.04	0.09	0.41	0.22
Diameter of existing pipe	D	inch	8.00	6.00	12.00	12.00	10.00
		ft	0.67	0.50	1.00	1.00	0.83
Manning's Roughness Coefficient	n	-	0.013	0.013	0.013	0.013	0.013
Slope of SS Pipe	S	-	0.0054	0.0050	0.0040	0.0040	0.0040
Flow Depth	d	ft	4.00	3.00	6.00	6.00	5.00
Proportional Depth of Flow	d/D	-	0.50	0.50	0.50	0.50	0.50
Angle of flow	Θ	radians	3.14	3.14	3.14	3.14	3.14
Area of flow	A	sq. ft.	0.17	0.10	0.39	0.39	0.27
Wetted Perimeter	W_P	ft	1.05	0.79	1.57	1.57	1.31
Hydraulic radius (A/W_P)	R	ft	0.17	0.13	0.25	0.25	0.21
Flow velocity	v	fps	2.54	2.02	2.87	2.87	2.54
Flow Rate of Existing Pipe at d/D=0.50	Q_C	cfs	0.44	0.20	1.13	1.13	0.69
$Q_M < Q_C$ *: OK*	-	-	OK	OK	OK	OK	OK

Existing Sewer Pipe Capacity at d/D=0.50	**Factors**	**Units**	**LINE A**	**LINE B**	
			6" Northerly	**6" Upstream Sewer Ejector**	**8" Downstream SSMH 7A**
Diameter of existing pipe	D	inch	6.00	6.00	8.00
		ft	0.50	0.50	0.67
Manning's Roughness Coefficient	n	-	0.013	0.013	0.013
Slope of SS Pipe	S	-	0.0064	0.0058	0.0058
Flow Depth	d	ft	3.00	3.00	4.00
Proportional Depth of Flow	d/D	-	0.50	0.50	0.50
Angle of flow	Θ	radians	3.14	3.14	3.14
Area of flow	A	sq. ft.	0.10	0.10	0.17
Wetted Perimeter	W_P	ft	0.79	0.79	1.05
Hydraulic radius (A/W_P)	R	ft	0.13	0.13	0.17
Flow velocity	v	fps	2.29	2.18	2.64
Flow Rate of Existing Pipe at d/D=0.50	Q_C	cfs	0.22	0.21	0.46

APPENDIX K

TOTAL SEWER DEMAND

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New Demand Flow Rate		
POC	Q	
	GPM	cfs
A	69	0.154
B	70	0.156
C	1	0.002
D	74	0.165
E	108	0.241

Total Sewer Demand (QT) : SCENARIO ANALYSIS 1	Factors	Units	LINE A
Factored Peak Flow (Monitored Peak Flow*2.5) CC01N	Q_M	cfs	0.00
Factored Peak Flow (Monitored Peak Flow*2.5) CC01W	Q_M	cfs	0.043
Future Demand Wing A	Q_N	cfs	0.477
Future Demand Wing B	Q_N	cfs	0.241
Total Sewer Demand	Q_T	cfs	0.761

Total Sewer Demand (QT) : SCENARIO ANALYSIS 2	Factors	Units	LINE A	LINE B @ (E) SSMH 7A	LINE B @ (E) 12" PIPE
Factored Peak Flow (Monitored Peak Flow*2.5) CC01N	Q_M	cfs	0.00	-	-
Factored Peak Flow (Monitored Peak Flow*2.5) CC01W	Q_M	cfs	0.043	-	-
Factored Peak Flow (Monitored Peak Flow*2.5) CC02					0.41
Exisitng 6" pipe (Sewer Ejector)	Q	cfs	-	0.210	0.21
Future Demand Wing A	Q_N	cfs	0.477	-	-
Future Demand Wing B	Q_N	cfs	-	0.241	0.241
Total Sewer Demand	Q_T	cfs	0.520	0.451	0.861

Total Sewer Demand (QT) : SCENARIO ANALYSIS 3	Factors	Units	LINE B	LINE B @ (E) 12" PIPE
Factored Peak Flow (Monitored Peak Flow*2.5) CC02			-	0.41
Exisitng 6" pipe (Sewer Ejector)	Q	cfs	0.210	0.21
Future Demand Wing A	Q_N	cfs	0.477	0.477
Future Demand Wing B	Q_N	cfs	0.241	0.241
Total Sewer Demand	Q_T	cfs	0.928	1.338

Total Sewer Demand (QT) : SCENARIO ANALYSIS 4	Factors	Units	LINE B	LINE B @ (E) 12" PIPE
Factored Peak Flow (Monitored Peak Flow*2.5) CC02			-	0.41
Exisitng 6" pipe (Sewer Ejector)	Q	cfs	0.210	0.21
Future Demand Wing A	Q_N	cfs	0.477	0.477
Future Demand Wing B	Q_N	cfs	0.241	0.241
Total Sewer Demand	Q_T	cfs	0.928	1.338

APPENDIX L

EXISTING PIPE CAPACITY (Q_C) vs. TOTAL SEWER DEMAND (Q_T)

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A. SCENARIO ANALYSIS 1

SCENARIO ANALYSIS 1			WING B		WING A		TOTAL DEMAND	
Total Sewer Demand (Q_T)			0.241	0.241	0.477	0.477	0.718	0.761
Calculations for Velocity and Discharge								
Diameter of Pipe	*D*	inches	6	6	8	8	8	8
Manning's Roughness Coefficient	*n*		0.013	0.013	0.013	0.013	0.013	0.013
Slope of SD Pipe	*S*	ft/ft	0.0064	0.0064	0.0054	0.0054	0.0054	0.0054
Proportional Depth of Flow	d/D		0.5	0.6	0.5	0.6	0.75	0.75
Flow Depth	*d*	inches	3	3.6	4	4.8	6	6
Angle of Flow	Θ	radians	3.1416	3.5443	3.1416	3.5443	4.1888	4.1888
Area of Flow	a	sq.ft	0.10	0.12	0.17	0.22	0.28	0.28
Wetted Perimeter	p	ft	0.79	0.89	1.05	1.18	1.40	1.40
Hydraulic Radius	r	ft	0.13	0.14	0.17	0.19	0.20	0.20
Using Manning's Equation, for pipe at flow depth 'd'								
Flow Velocity	v	fps	2.29	2.46	2.55	2.73	2.89	2.89
Pipe Capacity Flow Rate	Q_C	cfs	0.22	0.30	0.44	0.60	0.81	0.81
Is calculated Velocity greater than 2 fps?			YES	YES	YES	YES	YES	YES
Is the pipe capacity > hydrology accumulated flow rate?			NO	YES	NO	YES	YES	YES
Try Again			NG	OK	NG	OK	OK	OK

B. SCENARIO ANALYSIS 2

SCENARIO ANALYSIS 2			WING A TO LINE A		TOTAL DEMAND	WING B	TOTAL DEMAND	
							SSMH 7A	12" PIPE
Total Sewer Demand (Q_T)			0.477	0.477	0.52	0.241	0.451	0.861
Calculations for Velocity and Discharge								
Diameter of Pipe	*D*	inches	8	8	8	8	8	12
Manning's Roughness Coefficient	*n*		0.013	0.013	0.013	0.011	0.013	0.013
Slope of SD Pipe	*S*	ft/ft	0.0054	0.0054	0.0054	0.004	0.0058	0.004
Proportional Depth of Flow	d/D		0.5	0.6	0.6	0.5	0.5	0.5
Flow Depth	*d*	inches	4	4.8	4.8	4	4	6
Angle of Flow	Θ	radians	3.1416	3.5443	3.5443	3.1416	3.1416	3.1416
Area of Flow	a	sq.ft	0.17	0.22	0.22	0.17	0.17	0.39
Wetted Perimeter	p	ft	1.05	1.18	1.18	1.05	1.05	1.57
Hydraulic Radius	r	ft	0.17	0.19	0.19	0.17	0.17	0.25
Using Manning's Equation, for pipe at flow depth 'd'								
Flow Velocity	v	fps	2.55	2.73	2.73	2.59	2.64	2.87
Pipe Capacity Flow Rate	Q_C	cfs	0.44	0.60	0.60	0.45	0.46	1.13
Is calculated Velocity greater than 2 fps?			YES	YES	YES	YES	YES	YES
Is the pipe capacity > hydrology accumulated flow rate?			NO	YES	YES	YES	YES	YES
Try Again			NG	OK	OK	OK	OK	OK

C. SCENARIO ANALYSIS 3

SCENARIO ANALYSIS 3			WING A + WING B		TOTAL DEMAND			
					SSMH 7A		12" PIPE	
Total Sewer Demand (Q_T)			0.718	0.718	0.928	0.928	1.338	1.338
Calculations for Velocity and Discharge								
Diameter of Pipe	*D*	inches	8	10	8	10	12	12
Manning's Roughness Coefficient	*n*		0.011	0.011	0.013	0.011	0.013	0.013
Slope of SD Pipe	*S*	ft/ft	0.005	0.005	0.0058	0.0058	0.004	0.004
Proportional Depth of Flow	d/D		0.5	0.5	0.5	0.5	0.5	0.6
Flow Depth	*d*	inches	4	5	4	5	6	7.2
Angle of Flow	Θ	radians	3.1416	3.1416	3.1416	3.1416	3.1416	3.5443
Area of Flow	a	sq.ft	0.17	0.27	0.17	0.27	0.39	0.49
Wetted Perimeter	p	ft	1.05	1.31	1.05	1.31	1.57	1.77
Hydraulic Radius	r	ft	0.17	0.21	0.17	0.21	0.25	0.28
Using Manning's Equation, for pipe at flow depth 'd'								
Flow Velocity	v	fps	2.90	3.36	2.64	3.62	2.87	3.08
Pipe Capacity Flow Rate	Q_C	cfs	0.51	0.92	0.46	0.99	1.13	1.52
Is calculated Velocity greater than 2 fps?			YES	YES	YES	YES	YES	YES
Is the pipe capacity > hydrology accumulated flow rate?			NO	YES	NO	YES	NO	YES
Try Again			NG	OK	NG	OK	NG	OK

D. SCENARIO ANALYSIS 4

SCENARIO ANALYSIS 4			WING A + WING B				SE OUT		TOTAL DEMAND			
									SSMH 7A		12" PIPE	
Total Sewer Demand (Q_T)			0.718	0.718	0.928	0.928	0.928	0.928	0.928	0.928	1.338	1.338
Calculations for Velocity and Discharge												
Diameter of Pipe	*D*	inches	8	10	10	10	6	6	8	10	12	12
Manning's Roughness Coefficient	*n*		0.011	0.011	0.011	0.011	0.011	0.011	0.013	0.011	0.013	0.013
Slope of SD Pipe	*S*	ft/ft	0.005	0.005	0.005	0.005	0.0523	0.0523	0.0058	0.0058	0.004	0.004
Proportional Depth of Flow	d/D		0.5	0.5	0.5	0.6	0.5	0.6	0.5	0.5	0.5	0.6
Flow Depth	*d*	inches	4	5	5	6	3	3.6	4	5	6	7.2
Angle of Flow	Θ	radians	3.1416	3.1416	3.1416	3.5443	3.1416	3.5443	3.1416	3.1416	3.1416	3.5443
Area of Flow	a	sq.ft	0.17	0.27	0.27	0.34	0.10	0.12	0.17	0.27	0.39	0.49
Wetted Perimeter	p	ft	1.05	1.31	1.31	1.48	0.79	0.89	1.05	1.31	1.57	1.77
Hydraulic Radius	r	ft	0.17	0.21	0.21	0.23	0.13	0.14	0.17	0.21	0.25	0.28
Using Manning's Equation, for pipe at flow depth 'd'												
Flow Velocity	v	fps	2.90	3.36	3.36	3.61	7.74	8.30	2.64	3.62	2.87	3.08
Pipe Capacity Flow Rate	Q_C	cfs	0.51	0.92	0.92	1.23	0.76	1.02	0.46	0.99	1.13	1.52
Is calculated Velocity greater than 2 fps?			YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Is the pipe capacity > hydrology accumulated flow rate?			NO	YES	NO	YES	NO	YES	NO	YES	NO	YES
Try Again			NG	OK	NG	OK	NG	OK	NG	OK	NG	OK

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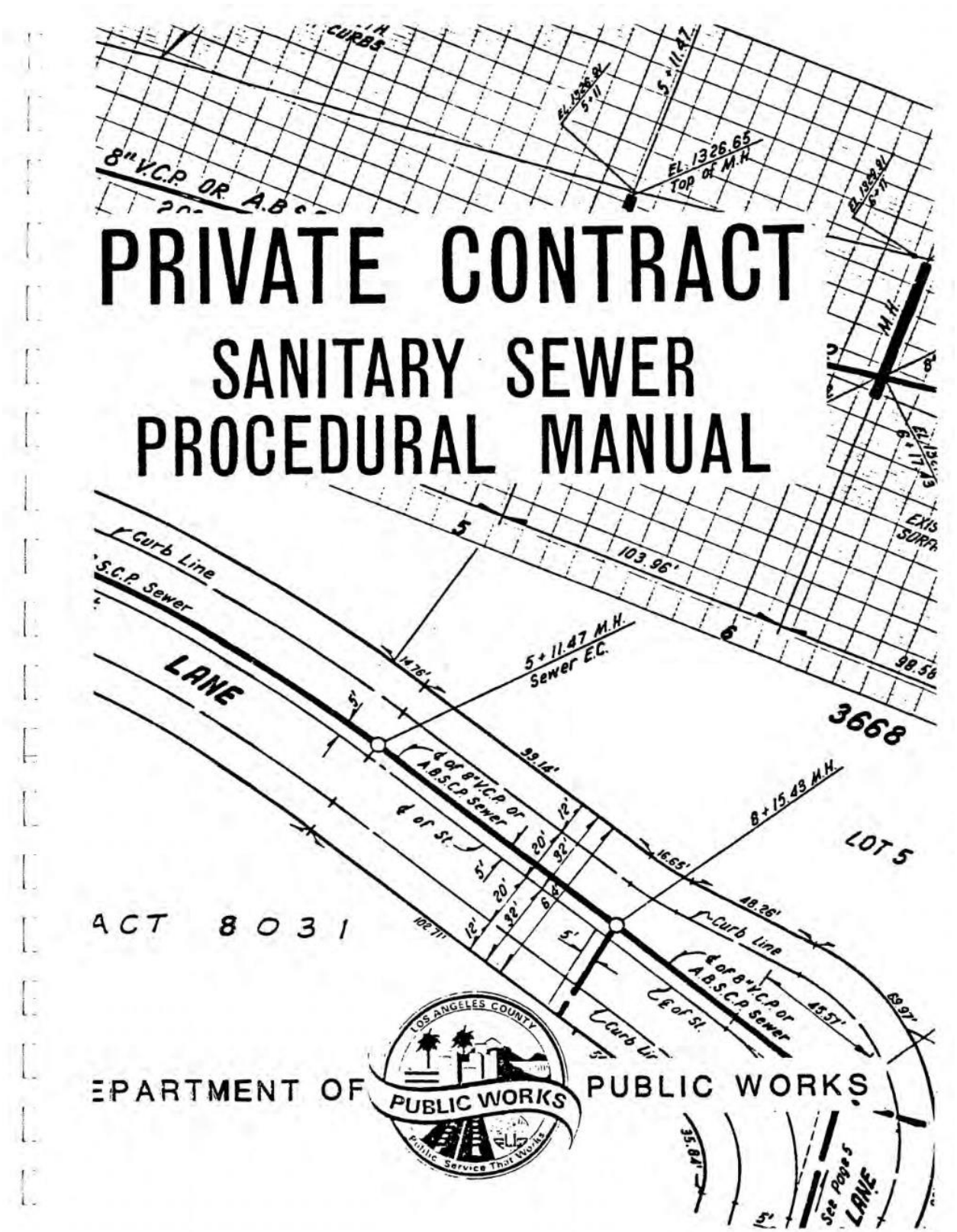
APPENDIX M

Excerpts from LA County DPW Sanitary Sewer Procedural Manual



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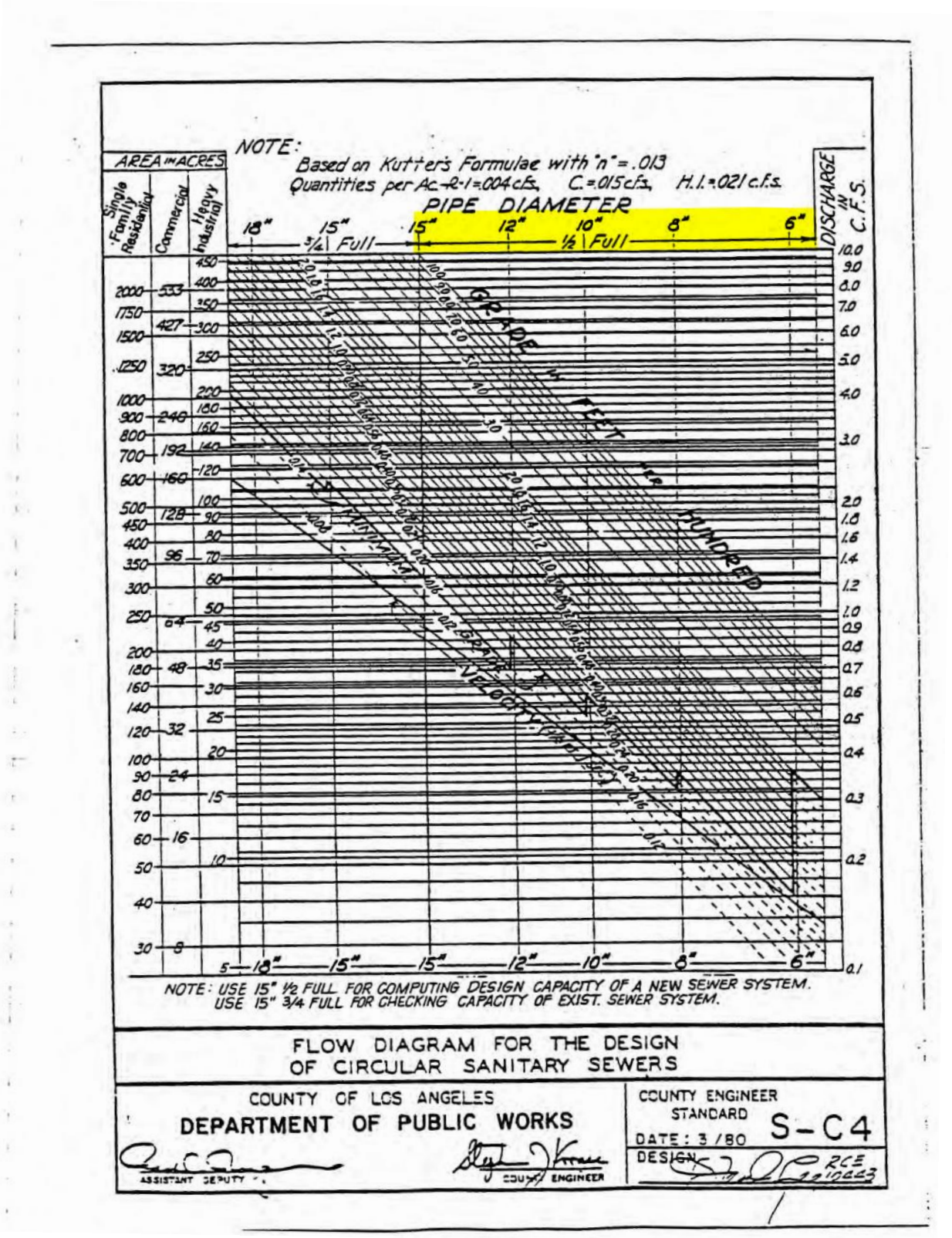

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