Appendix K

Sewer Capacity Assessment

PACIFIC CONSULTING GROUP

SEWER CAPACITY ANALYSIS

For:

Cedarwoods Fullerton

2461-2495 E. Orangethorpe Ave., Fullerton, CA 92831

APN: 338-172-24

Prepared for:
LTCGG LLC
13925 City Center Dr
Chino, California 91709

Prepared by:
Pacific Consulting Group, Inc.
2239 State Ave #B
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PACIFIC CONSULTING GROUP

Table of Contents

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Section 1. Discussion

The Cedarwoods Fullerton project is an industrial development planned to be constructed at 2461-2495 E. Orangethorpe Ave in the city of Fullerton. The proposed building for the project consists of 100,232 SF of warehouse space, and 10,000 SF of office space. The total area is 110,232 SF. This project site is a net 4.79 acres. The property is currently occupied by two individual office buildings and three individual commercial buildings.

The project is currently in the entitlement phase, and the purpose of this report is to identify any impacts the proposed project may have on the City of Fullerton's existing sewer infrastructure. The report will use hydraulic calculations and results of the City of Fullerton Sewer Master Plan to present the results and justifications found later in this report.

The City of Fullerton Sewer Master Plan, dated October 2009, states that unit flow factors for non-residential development in the FTC plan were adopted from the City of Los Angeles (Bureau of Engineering *Sewer Design Manual, Part F,* Table F229). A copy of Table F229 can be found in Appendix A of this report. Per Table F229, the design generation rate for commercial developments is 50 GPD/1000 SF, 120 GPD/1000 SF for office building, and 30 GPD/1000 SF.

Section 2. Methodology

This study investigates the capacity of the existing sewer infrastructure considering current sewage loading with the addition of the Cedarwood Fullerton project. The method employed to analyze the system will be to simply add the proposed project utilizing the generation rate in Table F229 and determine if there is any impact to the existing sewer capacity to accept the proposed project flow. The analysis will take the proposed sewage generation from the Cedarwood Fullerton project to analyze any change in capacity of the existing sewer network. Hydraulic calculations will be performed using Flowmaster by Haestad Methods. Pipe characteristics of the existing infrastructure come from as-built records provided by records request processed by the City of Fullerton. The As-built record plans are included in Appendix C and hydraulic calculations are presented in Appendix D.

Section 3. Existing Condition

The project is located within the east 2400 block and north side Orangethorpe Ave, in the City of Fullerton. The parcel in currently occupied by two individual office buildings and three individual commercial buildings. There is an existing 8" VCP sanitary sewer main and manhole at station 7+94 in Cypress Way. The existing buildings are connected to an existing onsite sewer main that connects east of the manhole.

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The existing sewage generation has been estimated below using the unit sewage flow factors from Table F229. (Table F229 can be found in Appendix A for reference).

Table 1: Existing Sewer Generation

Description	Facility Description	Size (SF)	Sewage Generation Factor in GPD	Total
Ex. Building A	Office	6,892	120/1,000 Gr SF	827 GPD
Ex. Building B	Office	9,222	120/1,000 Gr SF	1,107 GPD
Ex. Building C	Commercial	15,408	50/1,000 Gr SF	770 GPD
Ex. Building D	Commercial	13,018	50/1,000 Gr SF	651 GPD
Ex. Building E	Commercial	18,071	50/1,000 Gr SF	904 GPD
			Total GPD to Sewer main in Cypress Way	4,259 GPD
			Total GPM to Sewer main in Cypress Way	2.96 GPM

The use of FlowMaster by Haestad Methods will provide the hydraulic information for the existing and proposed sewer analysis.

Existing Conditions of the 8" sanitary sewer in Cypress Way are as follows:

1) Existing pipe is 8" VCP

2) Existing pipe slope is 0.40%

3) Existing pipe manning's *n* roughness coefficient is 0.13

4) The maximum flow capacity of the 8" sewer main in Cypress Way half full is 17.15 GPM

The existing sewer main in Cypress Way will be analyzed for capacity.

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Section 4. Proposed Condition

As noted above, the Cedarwoods Fullerton project is an industrial development planned to be constructed at 2461-2495 E. Orangethorpe Ave in the city of Fullerton. The proposed building for the project consists of 100,232 SF of warehouse space, and 10,000 SF of office space. The total area is 110,232 SF. The parcel is 4.79 acre. The parcel is proposed to be serviced by one sewer lateral that will connect to the existing manhole at station 7+94 in Cypress Way.

The proposed sewage generation for the project has been estimated below using the sewage generation factors from Table F229. (Table F229 can be found in Appendix A for reference).

Table 2: Proposed Sewer Demand

Description	Facility Description	Size (SF)	Sewage Generation Factor in GPD	Total
Office Space	Office	10,000	120/1,000 Gr SF	1,200 GPD
Warehouse Space	Warehouse	100,232	30/1,000 Gr SF	3,007 GPD
			Total GPD	4,207 GPD
			Total GPM	2.92 GPM

A comparison of the results from the existing and proposed sewage generation is shown in Table 3 of this report. As shown in the Table 3, a decrease in sewage generation is anticipated for the proposed development. Based on the results from the comparison it is reasonable to conclude that there will be no impact on the existing infrastructure as a net decrease is anticipated.

Table 3: Sewage Generation Comparison

Description	Total Sewage Generation (GPD)	Total Sewage Generation (GPM)
Existing Sewage Generation	4,259	2.96
Proposed Sewage Generation	4,207	2.92
Difference	-52 GPD (decrease)	-0.04 GPM (decrease)

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Section 5. Conclusion

The project has been evaluated to determine if the proposed project will have any future impacts on the existing infrastructure. To determine this, the existing and proposed sewage generation has been calculated. Based on these calculations, the proposed sewage generation is less then that of the existing condition. Furthermore, the maximum flow capacity (assuming 50% full flow) of the 8" sewer main in Cypress Way is 17.15 GPM of which the proposed sewage generation rate which well exceeds the projects sewage generation estimate. Based on the findings in this report, it is reasonable to justify that the proposed sewage generation from the Cedarwoods Fullerton project will not have any impact on the existing sewer infrastructure.

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Appendix A
References

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Appendix XIII – Bureau of Engineering, ”Table F229-Sewage Generation Factor”

SEWARAGE FACILITIES CHARGE
SEWAGE GENERATION FACTOR FOR
RESIDENTIAL AND COMMERCIAL CATEGORIES

EFFECTIVE DATE: April 6, 2012

Line No.	FACILITY DESCRIPTION	PROPOSED SGF IN GPD	BOD (mg/l)	SS (mg/l)
1	Acupuncture Office/Clinic	120/1,000 Gr SF	265	275
2	Arcade - Video Games	50/1,000 Gr SF	265	275
3	Auditorium (a)	3/Seat	265	275
4	Auto Parking (a)	20/1,000 Gr SF	265	275
5	Auto Mfg., Service Maintenance (b)	Actual	1,260	1,165
6	Bakery	280/1,000 Gr SF	3,020	2,540
7	Bank: Headquarters	120/1,000 Gr SF	265	275
8	Bank: Branch	50/1,000 Gr SF	265	275
9	Ballroom	350/1,000 Gr SF	265	275
10	Banquet Room	350/1,000 Gr SF	265	275
11	Bar: Cocktail, Fixed Set (a) (c)	15/Seat	265	275
12	Bar: Juice, No Baking Facilities (d)	720/1,000 Gr SF	265	275
13	Bar: Juice, with Baking Facilities (d)	720/1,000 Gr SF	265	275
14	Bar: Cocktail, Public Table Area (c)	720/1,000 Gr SF	265	275
15	Barber Shop	120/1,000 Gr SF	265	275
16	Barber Shop (s)	15/Stall	265	275
17	Beauty Parlor	425/1,000 Gr SF	265	275
18	Beauty Parlor (s)	50/Stall	265	275
19	Bldg. Const/Field Office (e)	120/Office	265	275
20	Bowling Alley: Alley, Lanes & Lobby Area	50/1,000 Gr SF	265	275
21	Bowling Facility: Arcade/Bar/Restaurant/Dancing	Total	Average	Average
22	Cafeteria: Fixed Seat	30/Seat	1,000	600
23	Car Wash: Automatic (b)	Actual	265	285
24	Car Wash: Coin Operated Bays (b)	Actual	265	285
25	Car Wash: Hand Wash (b)	Actual	265	285
26	Car Wash: Counter & Sales Area	50/1,000 Gr SF	265	275
27	Chapel: Fixed Seat	3/Seat	265	275
28	Chiropractic Office	120/1,000 Gr SF	265	275
29	Church: Fixed Seat	3/Seat	265	275
30	Church School: Day Care/Elem	9/Occupant	265	275
31	Church School: One Day Use (s)	9/Occupant	265	275
32	Cocktail Lounge: Fixed Seat (f)	15/Seat	265	275
33	Coffee House: No Food Preparation (d)	720/1,000 Gr SF	265	275
34	Coffee House: Pastry Baking Only (d)	720/1,000 Gr SF	265	275
35	Coffee House: Serves Prepared Food (d)	25/Seat	1,000	600
36	Cold Storage: No Sales (g)	30/1,000 Gr SF	265	275
37	Cold Storage: Retail Sales (g)	50/1,000 Gr SF	265	275
38	Comfort Station: Public	80/Fixture	265	275
39	Commercial Use (a)	50/1,000 Gr SF	265	275
40	Community Center	3/Occupant	265	275
41	Conference Room of Office Bldg.	120/1,000 Gr SF	265	275
42	Counseling Center (h)	120/1,000 Gr SF	265	275
43	Credit Union	120/1,000 Gr SF	265	275
44	Dairy	Average Flow	1,510	325
45	Dairy: Barn	Average Flow	1,510	325
46	Dairy: Retail Area	50/1,000 Gr SF	265	275
47	Dancing Area (of Bars or Nightclub) (c)	350/1,000 Gr SF	265	275
48	Dance Studio (i)	50/1,000 Gr SF	265	275
49	Dental Office/Clinic	250/1,000 Gr SF	265	275

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Line No.	FACILITY DESCRIPTION	PROPOSED SGF IN GPD	BOD (mg/l)	SS (mg/l)
50	Doughnut Shop	280/1,000 Gr SF	1,000	600
51	Drug Rehabilitation Center (h)	120/1,000 Gr SF	265	275
52	Equipment Booth	30/1,000 Gr SF	265	275
53	Film Processing (Retail)	50/1,000 Gr SF	265	275
54	Film Processing (Industrial)	Actual	265	275
55	Food Processing Plant (b)	Actual	2,210	1,450
56	Gas Station: Self Service	100/W.C.	265	275
57	Gas Station: Four Bays Max	430/Station	1,950	1,175
58	Golf Course Facility: Lobby/Office/Restaurant/Bar	Total	700	450
59	Gymnasium: Basketball, Volleyball (k)	200/1,000 Gr SF	265	275
60	Hanger (Aircraft)	50/1,000 Gr SF	265	275
61	Health Club/Spa (k)	650/1,000 Gr SF	265	275
62	Homeless Shelter	70/Bed	265	275
63	Hospital	70/Bed	820	1,230
64	Hospital: Convalescent (a)	70/Bed	265	275
65	Hospital: Animal	300/1,000 Gr SF	820	1,230
66	Hospital: Psychiatric	70/Bed	265	275
67	Hospital: Surgical (a)	360/Bed	265	275
68	Hotel: Use Guest Rooms Only (a)	120/Room	265	275
69	Jail	85/Inmate	265	275
70	Kennel: Dog Kennel/Open	100/1,000 Gr SF	265	275
71	Laboratory: Commercial	250/1,000 Gr SF	265	275
72	Laboratory: Industrial	Actual	265	275
73	Laundromat	185/Machine	550	370
74	Library: Public Area	50/1,000 Gr SF	265	275
75	Library: Stacks, Storage	30/1,000 Gr SF	265	275
76	Lobby of Retail Area (l)	50/1,000 Gr SF	265	275
77	Lodge Hall	3/Seat	265	275
78	Lounge (l)	50/1,000 Gr SF	265	275
79	Machine Shop (No Industrial Waste Permit Required) (b)	50/1,000 Gr SF	265	275
80	Machine Shop (Industrial)	Actual	265	275
81	Mfg or Industrial Facility (No IW Permit Required) (b)	50/1,000 Gr SF	265	275
82	Mfg or Industrial Facility (Industrial)	Actual	265	275
83	Massage Parlor	250/1,000 Gr SF	265	275
84	Medical Building (a)	225/1,000 Gr SF	265	275
85	Medical: Lab in Hospital	250/1,000 Gr SF	340	275
86	Medical Office/Clinic	250/1,000 Gr SF	265	275
87	Mini-Mall (No Food)	50/1,000 Gr SF	265	275
88	Mortuary: Chapel	3/Seat	265	275
89	Mortuary: Embalming	300/1,000 Gr SF	800	800
90	Mortuary: Living Area	50/1,000 Gr SF	265	275
91	Motel: Use Guest Room Only (a)	120/Room	265	275
92	Museum: All Area	30/1,000 Gr SF	265	275
93	Museum: Office Over 15%	120/1,000 Gr SF	265	275
94	Museum: Sales Area	50/1,000 Gr SF	265	275
95	Office Building (a)	120/1,000 Gr SF	265	275
96	Office Bldg w/Cooling Tower	170/1,000 Gr SF	265	275
97	Plating Plant (No IW Permit Required) (b)	50/1,000 Gr SF	265	275
98	Plating Plant (Industrial) (b)	Actual	265	275

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Line No.	FACILITY DESCRIPTION	PROPOSED SGF IN GPD	BOD (mg/l)	SS (mg/l)
99	Pool Hall (No Alcohol)	50/1,000 Gr SF	265	275
100	Post Office: Full Service (m)	120/1,000 Gr SF	265	275
101	Post Office: Private Mail Box Rental	50/1,000 Gr SF	265	275
102	Prisons	175/Inmate	265	275
103	Residential Dorm: College or Residential (n)	70/Student	265	275
104	Residential: Boarding House	70/Bed	265	275
105	Residential: Apt - Bachelor (a)	75/DU	265	275
106	Residential: Apt - 1 BDR (a) (o)	110/DU	265	275
107	Residential: Apt - 2 BDR (a) (o)	150/DU	265	275
108	Residential: Apt - 3 BDR (a) (o)	190/DU	265	275
109	Residential: Apt - >3 BDR (o)	40/BDR	265	275
110	Residential: Condo - 1 BDR (o)	110/DU	265	275
111	Residential: Condo - 2 BDR (o)	150/DU	265	275
112	Residential: Condo - 3 BDR (o)	190/DU	265	275
113	Residential: Condo - >3 BDR (o)	40/BDR	265	275
114	Residential: Duplex/Towhhouse - 1 BR (o)	110/DU	265	275
115	Residential: Duplex/Towhhouse - 2 BR (o)	150/DU	265	275
116	Residential: Duplex/Towhhouse - 3 BR (o)	190/DU	265	275
117	Residential: Duplex/Towhhouse - >3 BR (o)	40/BDR	265	275
118	Residential: SFD - 1 BR (o)	140/DU	265	275
119	Residential: SFD - 2 BR (o)	185/DU	265	275
120	Residential: SFD - 3 BR (o)	230/DU	265	275
121	Residential: SFD - >3 BR (o)	45/BDR	265	275
122	Residential Room Addition: Bedroom (o)	45/BDR	265	275
123	Residential Room Conversion: Into a Bedroom (o)	45/BDR	265	275
124	Residential: Mobile Home	Same as Apt	265	275
125	Residential: Artist (2/3 Area)	75/DU	265	275
126	Residential: Artist Residence	75/DU	265	275
127	Residential: Guest Home w/ Kitchen	Same as Apt	265	275
128	Residential: Guest Home w/o Kitchen	45/BDR	265	275
129	Rest Home	70/Bed	555	490
130	Restaurant: Drive-In	50/Stall	1000	600
131	Restaurant: Drive-In Seating Area	25/Seat	1000	600
132	Restaurant: Fast Food Indoor Seat	25/Seat	1000	600
133	Restaurant: Fast Food Outdoor Seat	25/Seat	1000	600
134	Restaurant: Full Service Indoor Seat (a)	30/Seat	1000	600
135	Restaurant: Full Service Outdoor Seat	30/Seat	1000	600
136	Restaurant: Take Out	300/1,000 Gr SF	1000	600
137	Retail Area (greater than 100,000 SF)	50/1,000 Gr SF	265	275
138	Retail Area (less than 100,000 SF)	25/1,000 Gr SF	265	275
139	Rifle Range: Shooting Stalls/Lanes, Lobby	50/1,000 Gr SF	265	275
140	Rifle Range Facility: Bar/Restaurant	Total	Average	Average
141	School: Arts/Dancing/Music (i)	11/Student	265	275
142	School: Elementary/Jr. High (a) (p)	9/Student	265	275
143	School: High School (a) (p)	11/Student	265	275
144	School: Kindergarten (s)	9/Student	265	275
145	School: Martial Arts (i)	9/Student	265	275
146	School: Nursery-Day Care (p)	9/Child	265	275
147	School: Special Class (p)	9/Student	265	275

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Line No.	FACILITY DESCRIPTION	PROPOSED SGF IN GPD	BOD (mg/l)	SS (mg/l)
148	School: Trade or Vocational (p)	11/Student	265	275
149	School: Training (p)	11/Student	265	275
150	School: University/College (a) (p)	16/Student	265	275
151	School: Dormitory (a) (n)	70/Student	265	275
152	School: Stadium, Pavilion	3/Seat	265	275
153	Spa/Jacuzzi (Commercial with backwash filters)	Total	265	275
154	Storage: Building/Warehouse	30/1,000 Gr SF	265	275
155	Storage: Self-Storage Bldg	30/1,000 Gr SF	265	275
156	Store: Ice Cream/Yogurt	25/1,000 Gr SF	1000	600
157	Store: Retail (l)	50/1,000 Gr SF	265	275
158	Studio: Film/TV - Audience Viewing Room (q)	3/Seat	265	275
159	Studio: Film/TV - Regular Use Indoor Filming Area (q)	50/1,000 Gr SF	265	275
160	Studio: Film/TV - Ind. Use Film Process/Machine Shop (q)	50/1,000 Gr SF	265	275
161	Studio: Film/TV - Ind. Use Film Process/Machine Shop	Total	265	275
162	Studio: Recording	50/1,000 Gr SF	265	275
163	Swimming Pool (Commercial with backwash filters)	Total	265	275
164	Tanning Salon: Independent, No Shower (r)	50/1,000 Gr SF	265	275
165	Tanning Salon: Within a Health Spa/Club	640/1,000 Gr SF	265	275
166	Theater: Drive-In	6/Vehicle	265	275
167	Theater: Live/Music/Opera	3/Seat	265	275
168	Theater: Cinema	3/Seat	265	275
169	Tract: Commercial/Residential	1/Acre	265	275
170	Trailer: Const/Field Office (e)	120/Office	265	275
171	Veterinary Clinic/Office	250/1,000 Gr SF	265	275
172	Warehouse	30/1,000 Gr SF	265	275
173	Warehouse w/ Office	Total	265	275
174	Waste Dump: Recreational	400/Station	2650	2750
175	Wine Tasting Room: Kitchen	200/1,000 Gr SF	265	275
176	Wine Tasting Room: All Area	50/1,000 Gr SF	265	275

Appendix B
Maps & Exhibits

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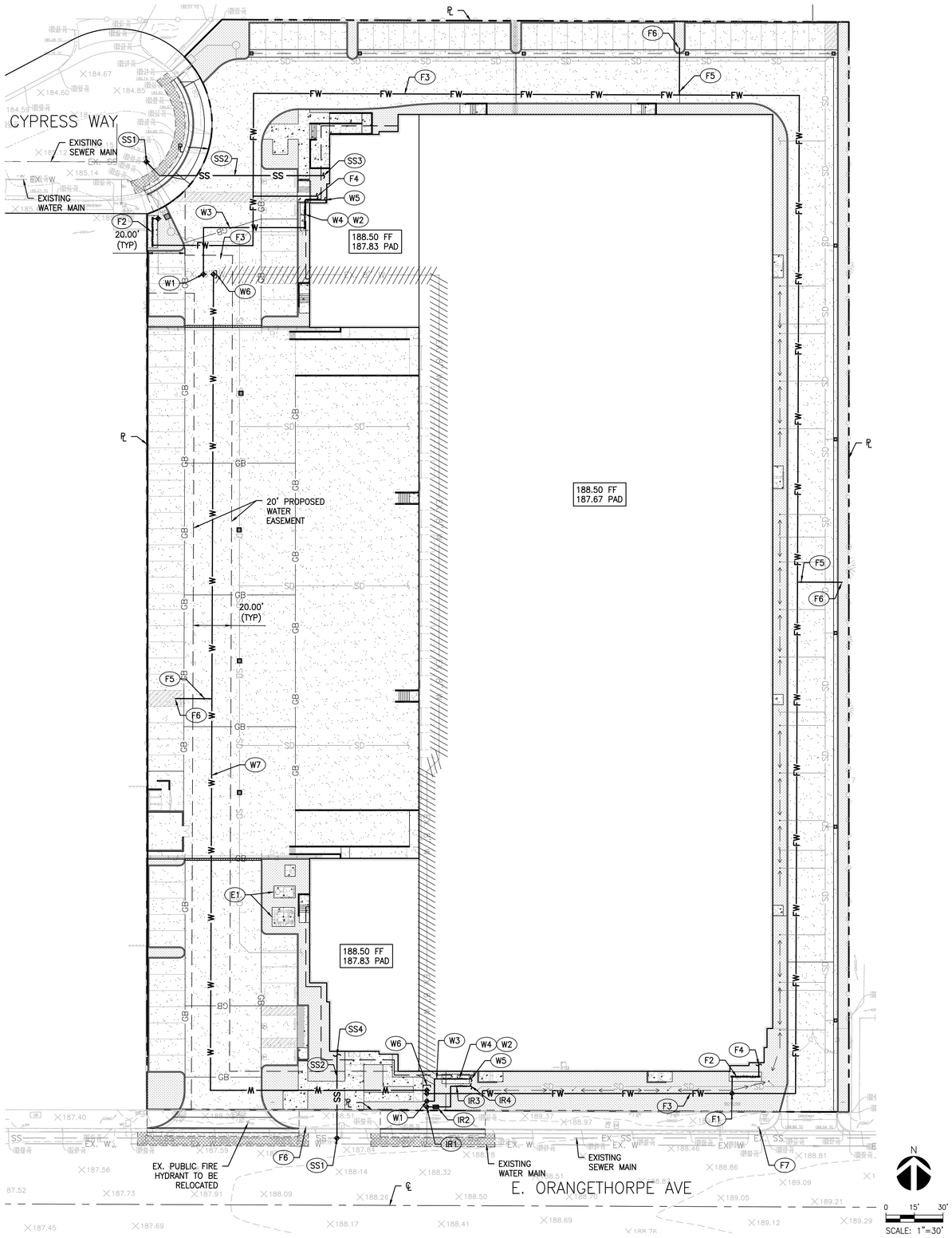

LEGEND

- LANDSCAPE AREA BY OTHERS
- PEDESTRIAN CONCRETE
- ASTROTURF
- PERMEABLE PAVEMENT BY OTHERS
- RETAINING WALL
- PROPERTY LINE
- GB — GRADE BREAK
- R — RIDGE LINE
- FLOW LINE
- CATCH BASIN
- AREA DRAIN
- GARDEN WALL
- POINT OF CONNECTION
- COORDINATION POINT
- BACKFLOW ASSEMBLY
- WATER METER VAULT
- FIRE DEPARTMENT CONNECTION (FDC)
- FW — FIRE WATER PIPE
- SD — STORM DRAIN SHOWN FOR REFERENCE
- W — WATER PIPE
- SS — SANITARY SEWER PIPE
- DEMOLITION OF EXISTING UTILITY

UNDERGROUND UTILITIES & STRUCTURES

THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITY PLANS OR STRUCTURES SHOWN ON THESE PLANS WERE OBTAINED BY A SEARCH OF AVAILABLE RECORDS AND MAY NOT REFLECT ALL EXISTING UTILITIES. THE CONTRACTOR SHALL TAKE DUE PRECAUTIONS OF THE RECORDED UTILITIES AS WELL AS ANY NOT SHOWN AND SHALL CONFIRM ALL ALIGNMENTS AND GRADES BY FIELD INVESTIGATIONS. THE CONTRACTOR IS REQUIRED TO TAKE ALL PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES SHOWN, AND IS RESPONSIBLE FOR THE PROTECTION OF, AND ANY DAMAGE TO THESE LINES OR STRUCTURES.

CAUTION: THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

ENGINEER'S NOTICE TO CONTRACTOR

THE CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIBAILITY, REALL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.

CONSTRUCTION NOTES

SANITARY SEWER

(SS1) CONTRACTOR TO LOCATE AND CONNECT TO EXISTING SEWER LATERAL. IF UNAVAILABLE OR INSUFFICIENT SIZE, INSTALL HOUSE CONNECTION PER CITY OF FULLERTON STD PLAN NO. 209A & 209B.

(SS2) INSTALL 6" PVC, SDR-35 SANITARY SEWER PIPE. MIN. SLOPE = 2%. SIZE TO BE VERIFIED

(SS3) POINT OF CONNECTION 5' OUTSIDE BUILDING ENVELOPE. SEE PLUMBING DRAWINGS FOR CONTINUATION.

(SS4) POSSIBLE NEW SEWER LATERAL HOUSE CONNECTION. NEW HOUSE CONNECTION TO BE COORDINATED WITH THE CITY OF PLACENTIA AND INSTALLED PER CITY OF PLACENTIA STANDARDS AND REQUIREMENTS.

DOMESTIC WATER

(W1) CONTRACTOR TO ORDER AND COORDINATE NEW DOMESTIC WATER SERVICE CONNECTION FROM JHA

(W2) 3" DOMESTIC WATER METER PER CITY OF FULLERTON STANDARD PLAN 603. CONTRACTOR TO COORDINATE WATER SERVICE CONNECTION WITH JHA. SIZE TO BE CONFIRMED.

(W3) INSTALL 3" SCHEDULE 40 PVC WATER PIPE. SIZE TO BE CONFIRMED.

(W4) INSTALL APPROVED 3" REDUCED PRESSURE BACKFLOW PREVENTOR. SEE PLUMBING PLANS FOR DETAILS. SIZE TO BE CONFIRMED.

(W5) POINT OF CONNECTION. SEE PLUMBING PLANS FOR CONTINUATION, DETAIL AND SPECIFICATION.

(W6) EXISTING WATER LATERAL TO BE CUT AND CAPPED PER LOCAL JHA REQUIREMENTS.

(W7) INSTALL 8" DOMESTIC WATER MAIN. SEE CITY OF FULLERTON STANDARD PLAN 600 & 701.

FIRE WATER

(F1) CONTRACTOR TO ORDER AND COORDINATE NEW FIRE WATER SERVICE CONNECTION FROM JHA.

(F2) INSTALL APPROVED 6" DOUBLE CHECK DETECTOR VALVE ASSEMBLY AND WATER METER PER CITY OF FULLERTON STD. DETAIL 603. SEE FIRE SPRINKLER PLANS FOR DETAILS. SIZE TO BE CONFIRMED.

(F3) INSTALL 6" C-900 PVC WATER PIPE. SIZE TO BE CONFIRMED.

(F4) POINT OF CONNECTION. SEE FIRE SPRINKLER PLANS FOR CONTINUATION, DETAIL AND SPECIFICATION.

(F5) INSTALL GATE VALVE, VALVE BOX ASSEMBLY AND STEM EXTENSION PER CITY OF FULLERTON STD. DETAIL 650 AND 651.

(F6) INSTALL FIRE HYDRANT PER CITY OF FULLERTON STD. DETAIL 610.

(F7) EXISTING FIRE HYDRANT SHOWN FOR REFERENCE.

IRRIGATION WATER

(IR1) 2" IRRIGATION WATER METER PER CITY OF FULLERTON STD. DETAIL 602. . CONTRACTOR TO COORDINATE WATER SERVICE CONNECTION WITH JHA. SIZE TO BE CONFIRMED.

(IR2) INSTALL 2" SCHEDULE 40 PVC WATER PIPE. SIZE TO BE CONFIRMED.

(IR3) INSTALL APPROVED 2" REDUCED PRESSURE BACKFLOW PREVENTOR. SEE PLUMBING PLANS FOR DETAILS. SIZE TO BE CONFIRMED.

(IR4) POINT OF CONNECTION TO IRRIGATION SYSTEM. SEE IRRIGATION PLANS FOR CONTINUATION, DETAIL AND SPECIFICATION.

ELECTRICAL

(E1) PROPOSED TRANSFORMER AND SWITCHGEAR. SEE ELECTRICAL PLANS.

NOTES:

1. BACKFLOW PREVENTORS SHOWN HEREON, ARE FOR COORDINATION PURPOSES ONLY.
2. ALL STREET TRENCHES REQUIRED FOR THE INSTALLATION OF UTILITY CONNECTIONS SHALL COMPLY WITH CITY OF FULLERTON STANDARDS NO. 312 AND 313.
3. SERVICE LATERALS SHALL BE INSTALLED PER CITY OF FULLERTON STANDARD PLAN 701.
4. SEE SHEET C010 FOR KNOWN EXISTING UTILITIES WITHIN SITE. SHOWN EXISTING UTILITIES ARE BASED UPON AVAILABLE RECORDS.

PACIFIC CONSULTING GROUP

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COSTA MESA, CA 92627
T: 818 800 6991
E: Kyle@pacificconsultinginc.com
PCG JOB NO. 24136

CEDARWOODS FULLERTON

2461 - 2495 E. ORANGETHORPE AVE.
FULLERTON, CA 92831

REGISTERED PROFESSIONAL ENGINEER
KYLE JARDINE PROUTY
C 95048
EXP. 09/30/25
CIVIL
STATE OF CALIFORNIA

SIGN DATE 05/02/2025

NOT FOR CONSTRUCTION

REVISIONS:

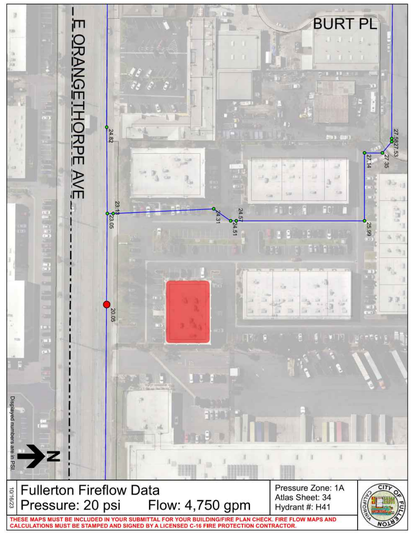
JOB NO.: 24136

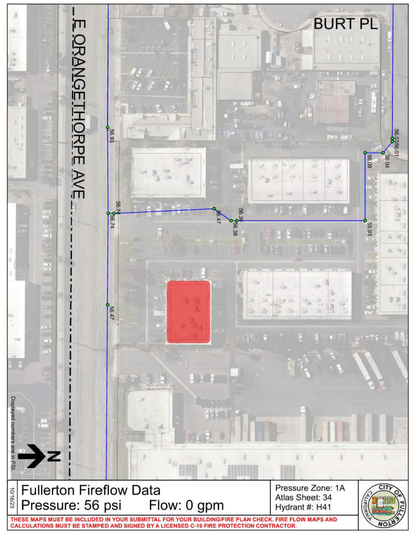
DATE: 05.02.2025

SCALE: AS NOTED

SHEET TITLE: UTILITY PLAN

SHEET NUMBER: C400





1 C401 **FIRE FLOW TESTS**
N.T.S.

PACIFIC CONSULTING GROUP

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SIGN DATE 05/02/2025

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REVISIONS:

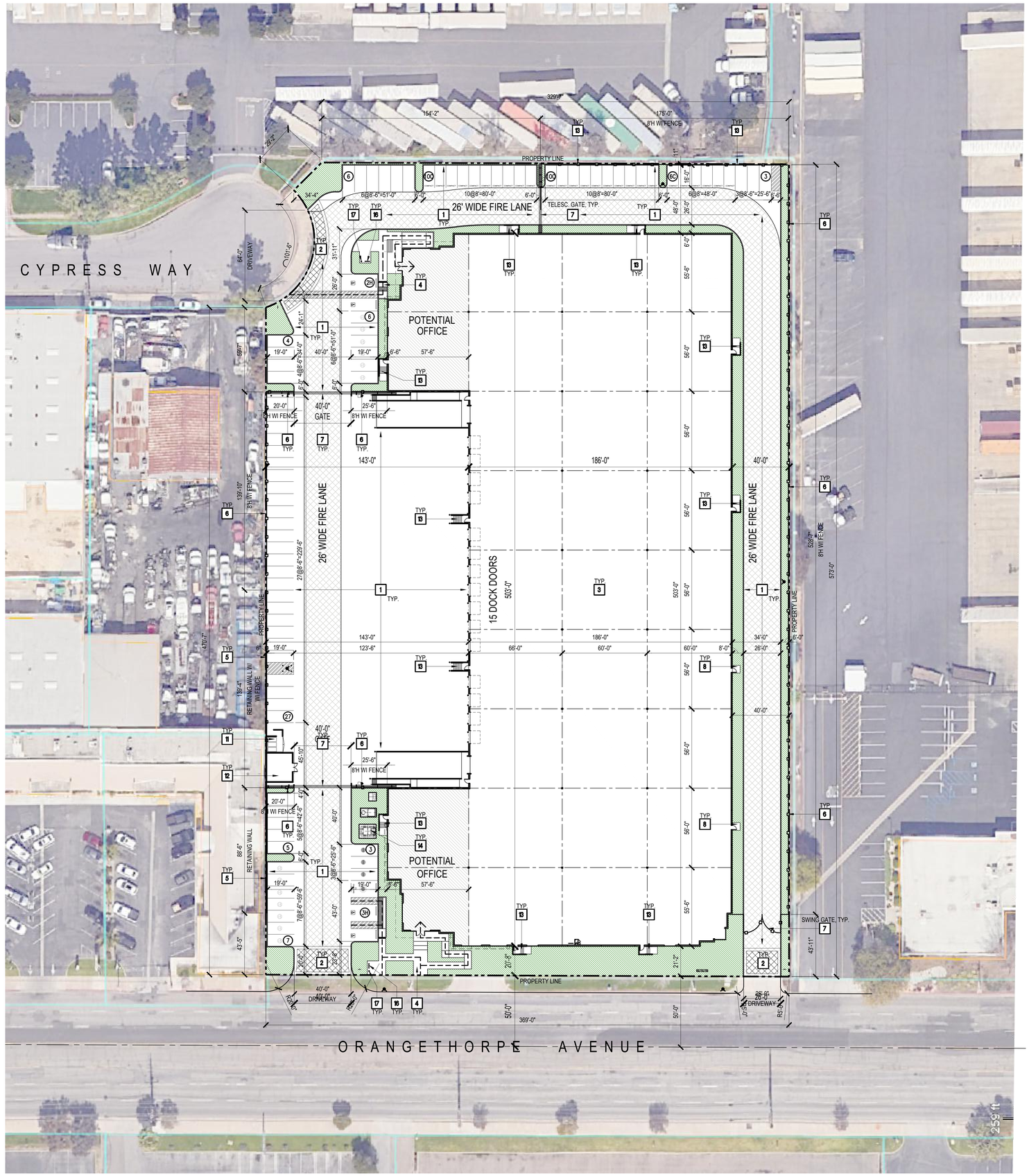
JOB NO.: 24136

DATE: 05.02.2025

SCALE: AS NOTED

SHEET TITLE: UTILITY DETAILS

SHEET NUMBER: C401



OVERALL SITE PLAN

TRUE NORTH

SCALE 1" = 30'-0"

1

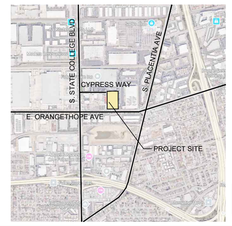
APPLICANT/OWNER

LTCGG LLC.
13925 CITY CENTER DRIVE, SUITE 200
CHINO HILLS, CA 91709
ANNIE@HKV.ONE
ATT: ANNIE TAVETIAN GALLAGHER

PROJECT ADDRESS / APN

2461-2495 E. ORANGETHORPE AVE.
FULLERTON, CA 92831
APN: 338-172-24

VICINITY MAP



PROJECT DESCRIPTION

NEW CONSTRUCTION FOR (1) SPECULATIVE 110,232 SF TYPE III-B, S-1/B OCCUPANCY WAREHOUSE WITH ESFR FIRE SPRINKLER SYSTEM. PROPOSED SITE IMPROVEMENTS CONSIST OF TRASH ENCLOSURE, PUMP HOUSE, SITE LIGHTING STANDARDS, WROUGHT IRON FENCE AND HARDSCAPE/LANDSCAPE IMPROVEMENTS PER CITY STANDARDS TOTAL OCCUPANT LOAD; WAREHOUSE (S-1): 201 AND OFFICE (B): 40.

PROJECT DATA

Fullerton

SITE AREA		208,628	SF
		4.79	Acres
BUILDING AREA			
1ST FLOOR	WAREHOUSE	100,232	SF
	OFFICE	5,000	SF
1ST TOTAL		105,232	SF
2ND FLOOR	OFFICE	5,000	SF
TOTAL		110,232	SF
PROJECT FACT			
	FAR PROVIDED		0.53
	CLEAR HEIGHT		36'
	BLDG HEIGHT		42'
ZONING			
ZONE EXISTING			MP- 100 & C-M ES
ZONE PROPOSED			MP-100
MAX BUILDING HEIGHT			45'
SET BACK			
	STREET	20'	
	SIDE	0'	
	REAR	0'	
PARKING REQ			
	AUTO PARKING		
	SIZE		8'-6" X 19'
	WAREHOUSE 1 PER 2000		51
	OFFICE 1 PER 250		40
	TOTAL		91
PROJECT PROVIDED			
PARKING PROVIDED			
	AUTO PARKING		
	STANDARD	8'-6" X 19'	44
	ADA STD	8'-6" X 19'	2
	ADA VAN	12' X 19'	2
	COMPACT	8' X 16'	26
	EVCS VAN	12' X 19'	1
	EVCS STD	8'-6" X 19'	3
	EV CAPABLE	8'-6" X 19'	13
	TOTAL		91

GENERAL NOTES

1. ALL DIMENSIONS ARE TO FACE OF CONCRETE WALL, FACE OF CONCRETE CURB OR GRID LINES UNLESS NOTED OTHERWISE.
2. ENTIRE PROJECT SHALL BE PERMANENTLY MAINTAINED WITH A SMART AUTOMATIC IRRIGATION SYSTEM.
3. SEE CIVIL DRAWINGS FOR ADDITIONAL INFORMATION REGARDING SITE DRAINAGE, TOPOGRAPHY AND UTILITIES.
4. FOR PAVING SECTIONS, CONCRETE CURBS, SWALES AND GUTTERS SEE CIVIL DRAWINGS.
5. PROPERTY LINE ARE REFERENCE ONLY. REFER TO CIVIL DRAWINGS FOR HORIZONTAL CONTROL.
6. LANDSCAPE AREAS SHALL BE DELINEATED WITH A MIN. 6" CONCRETE CURB.

KEYNOTES

1. SITE PAVING WITH HEAVY BROOM FINISH. SEE CIVIL
2. DECORATIVE PAVEMENT AT ENTRY - COLORED CONCRETE W/ SAW CUT PATTERN
3. PRIMARY BUILDING
4. PEDESTRIAN CONCRETE WALKWAY WITH MEDIUM BROOM FINISH
5. RETAINING WALL.
6. 8'H WROUGHT IRON FENCE.
7. 8'H BLACK PAINTED VEHICULAR ROLLING GATE WITH KNOX PAD LOCK. MANUALLY OPERATED. PROVIDE CONDUITS FOR FUTURE OPERATOR
8. 5'-6" X 6' X 4" THICK CONCRETE LANDING PAD AT ALL EXTERIOR MANDOORS WITH MEDIUM BROOM FINISH.
9. NOT USED
10. NOT USED
11. TRASH ENCLOSURE
12. PUMP HOUSE
13. EXTERIOR CONCRETE STAIR
14. APPROXIMATE LOCATION OF ELEC. TRANSFORMER WITH BOLLARD PROTECTION AND LANDSCAPE SCREENING
15. NOT USED.
16. SHORT TERM - BICYCLE RACK 5% OF PARKING STALL
17. DESIGNATED SMOKING AREA - 25' AWAY FROM ANY ENTRY

LEGEND

- STANDARD PARKING STALL 8'-6" X 19'
- COMPACT PARKING STALL 8'-0" X 16'
- ADA PARKING VAN 12' X 19' WITH 5' CLR AISLE
- VAN (12'X19') EVCS WITH ISA SIGN AND MARKING "EV CHARGING ONLY" WITH 5' ACCESSIBLE AISLE.
- STANDARD EVCS PARKING STALL 8'-6" X 19'
- STANDARD EV CAPABLE PARKING STALL 8'-6" X 19'
- PROPERTY LINE
- ACCESSIBLE PATH OF TRAVEL. MAX 5% SLOPE AND MAX 2% CROSS SLOPE WITH 48" MIN. CLEAR, UNLESS NOTED OTHERWISE WITH ADA ACCESSIBLE RAMP
- LANDSCAPE, SEE LANDSCAPE DRAWINGS

SKH ARCHITECT

STEVE K HONG ARCHITECT
4000 WESTERLY PLACE SUIT 100
NEWPORT BEACH CALIFORNIA 92660
PROJECT MANAGER: STEVE HONG
714 - 822 - 1171, STEVE@SKHARCHITECT.COM

CONSULTANTS

CIVIL ENGINEER
PACIFIC CONSULTING GROUP, INC.
COSTA MESA, CA
TEL: 818-800-6991
EMAIL: KYLE@PACIFICCONSULTINGINC.COM
ATTN: KYLE PROUTY

LANDSCAPE ARCHITECT
RODARTE LANDSCAPE ARCHITECTURE, INC.
740 13TH. SUITE 320
SAN DIEGO, CA 92101
TEL: 909-771-8171
EMAIL: LORENZO@RODARTELANDARCH.COM
ATTN: LORENZO RODARTE

C E D A R W O O D S
F U L L E R T O N

2461–2495 E. ORANGETHORPE AVE.
FULLERTON, CA 92831

L T C G G L L C

13925 CITY CENTER DR, SUITE 200
CHINO HILLS, CA 91709

No.	ISSUANCE	DATE

JOB No.
24-059

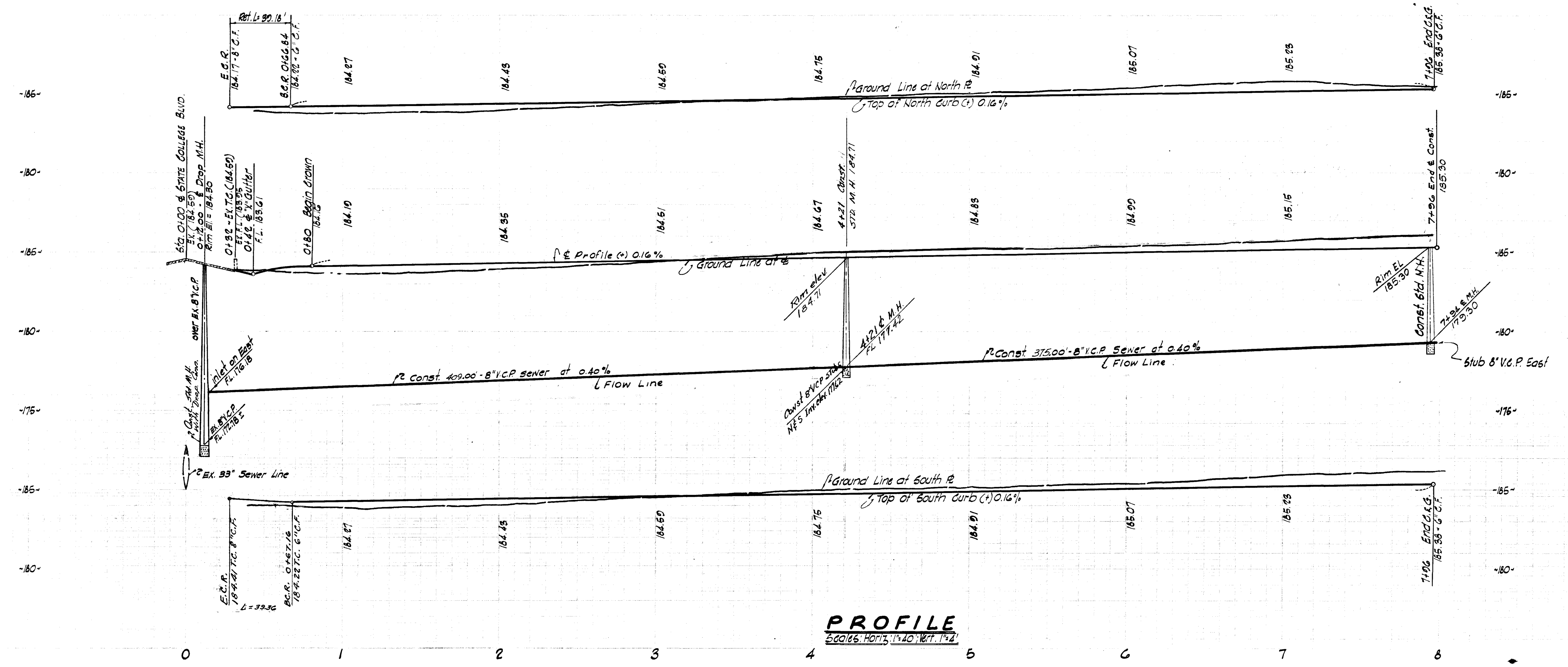
DRAWN STEVE HONG
CHECKED STEVE HONG

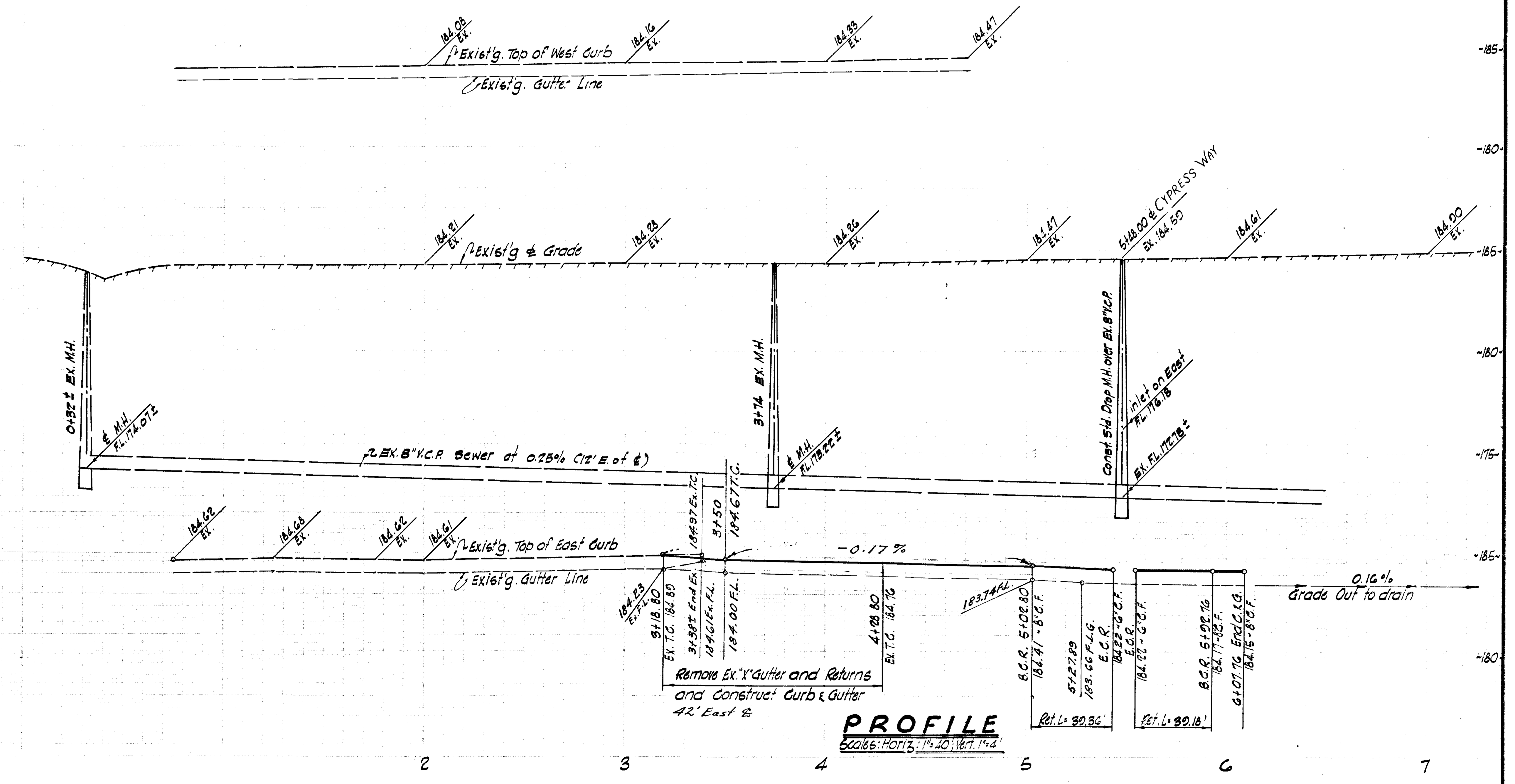
SHEET TITLE
ARCHITECTURAL
OVERALL SITE PLAN

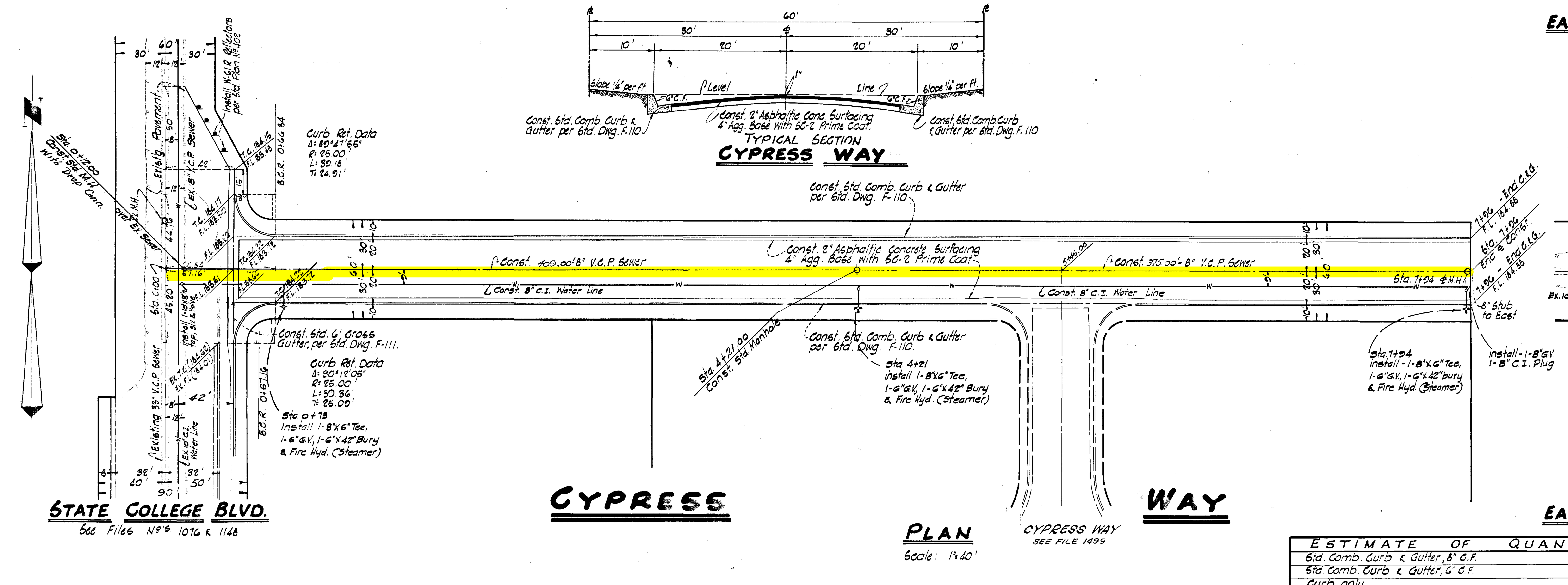
SHEET NUMBER
DRC-A1.01

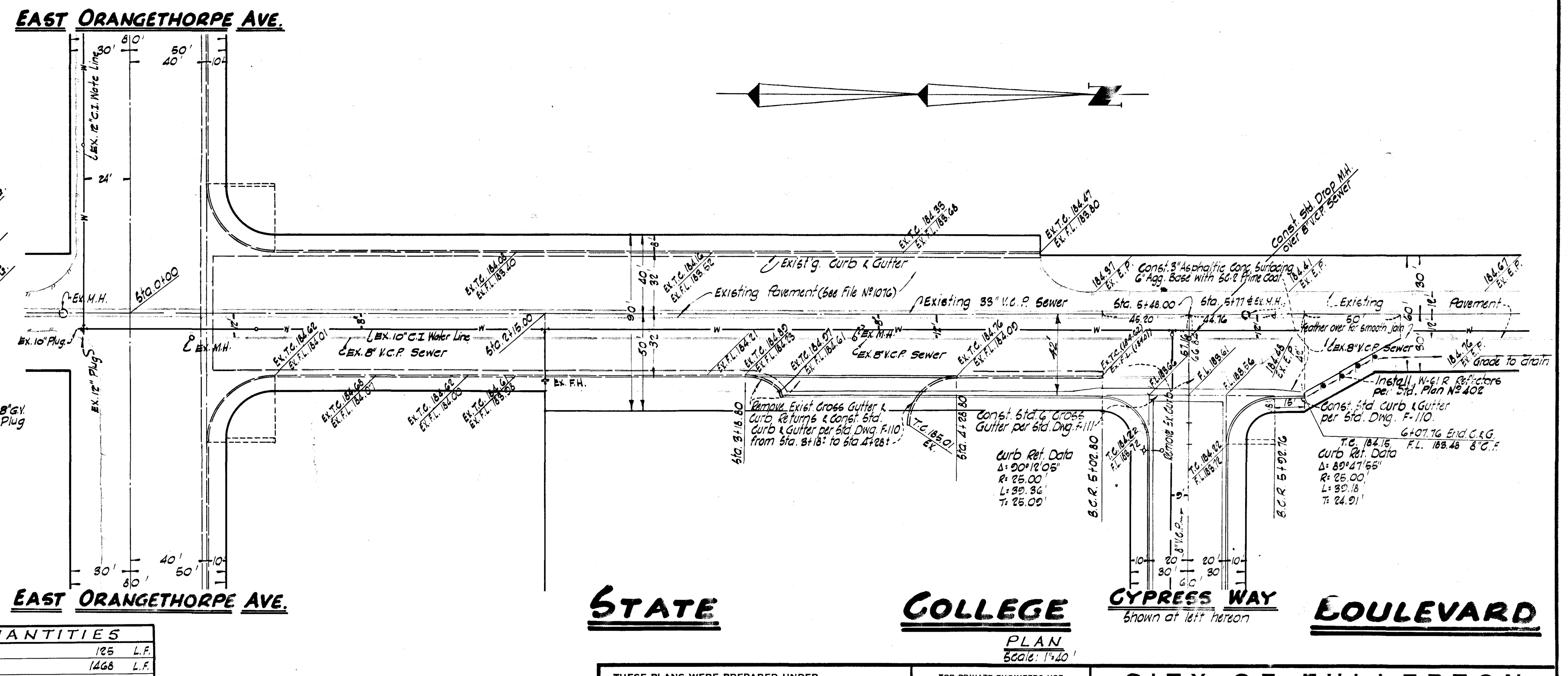
Appendix C
Supporting Documents

2239 State Ave, #B
Costa Mesa, California 92627
(818) 800 6991
Kyle@pacificconsultinginc.com









ESTIMATE OF QUANTITIES		
Std. Comb. Curb & Gutter, 8" C.F.	125	L.F.
Std. Comb. Curb & Gutter, 6" C.F.	1468	L.F.
Curb only	79	L.F.
2" A.C.S. over 4" Agg. Base with SC-2 Prime Coat	27,036	S.F.
3" A.C.S. over 6" Agg. Base with SC-2 Prime Coat	1680	S.F.
Remove Ex. Curb only	107	L.F.
Remove Ex. Cross Gutter	660	S.F.
Const. Std. Cross Gutter	609	S.F.
W.G.I.R. Reflector Paddles	4	Ea.
~SEWER~		
8" V.C.P. Sewer	798	L.F.
Manholes	3	Ea.

THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF: DAVID M. WOODS

3-19-62 David M. Woods
DATE REGISTERED CIVIL ENGINEER NO. 12079

REVISIONS	
DATE	DESCRIPTION
5-2-62	Raise Sewer & Revise Street Name (L.H.S.)
5-8-62	Moved Curb 42' out No. Sta. 3+19 St.J.
5-23-62	Revise Sewer at State College Blvd. & Location of M.H.s on Cypress Way. - By: L.H.S.
5-29-62	Moved M.H. from Sta 4+00 to 4+21 (J.E.W.)

FOR PRIVATE ENGINEERS USE	INITIAL	DATE
DRAWN	J.M.	3-16-62
CHECKED		

FOR CITY USE ONLY	INITIAL	DATE
CHECKED	St.J.	3/22/62
SEWER	L.H.J.	3/22/62
DRAINAGE	L.H.J.	3/22/62
WATER	E.S.	3/23/62
ST. SUPT.		
FINAL CHECK		
R/W		
AS CONST.		

CITY OF FULLERTON
OFFICE OF THE CITY ENGINEER

PLAN AND PROFILE
CYPRESS WAY
STATE COLLEGE BOULEVARD

APPROVED: 3-23- William C. Stookey, CITY ENGINEER

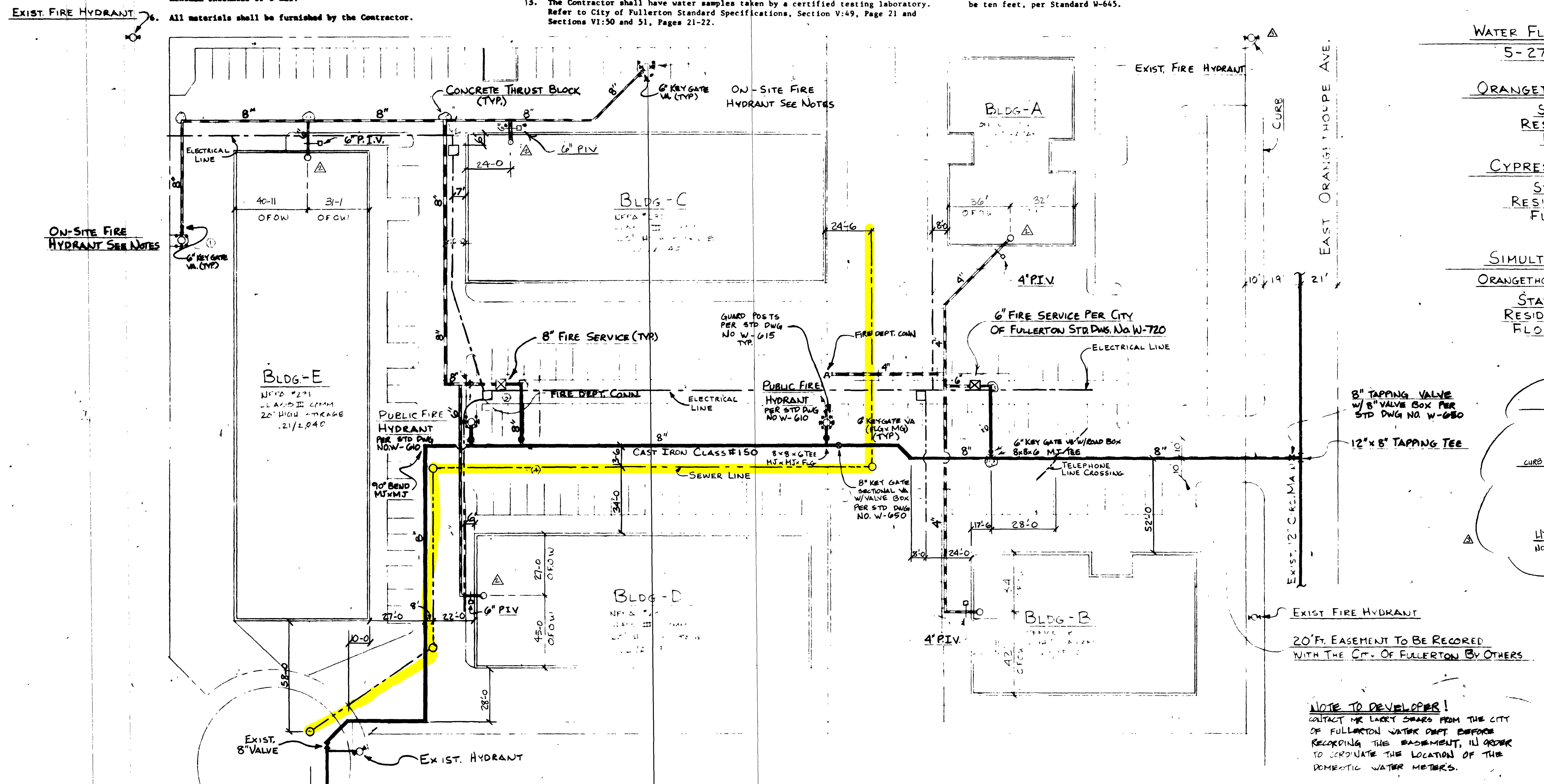
SCALE: HORIZ: 1"=40' VERT: 1"=4' | F.B. PG. | SHEET 1 OF 1 SHEETS

B.M. #69 T.C. AT B.C. N.E. CORNER ORANGETHORPE AND CYPRESS ELEV. 184.62 | FILE: 1531

J.N. #558

Water Construction Notes:

1. The City's Standard Specifications and Standard Drawings with permits must be on the job site.
2. The Contractor will notify the Water Engineering Division at least 48 hours prior to construction to arrange for inspection. Phone (714) 738-6886 or (714) 738-6896.
3. The Contractor shall obtain all required permits prior to the start of construction.
4. Two days prior to excavation, the Contractor shall notify all public utility companies and owners of all private utilities within the construction area.
5. All pipe and fittings shall be ductile iron, Class #50. All pipe and fittings shall be polyethylene encased per ANSI. A21.5-1972, with minimum thickness of 8 mil.
6. All materials shall be furnished by the Contractor.
7. The Contractor shall check with Traffic Engineering for traffic requirements and excavation permits. Phone (714) 738-6857.
8. The substructures shown on this plan are approximate only, and it shall be the responsibility of the Contractor to verify locations and/or elevations.
9. The water line shall have a minimum depth of cover of 42", (depending on the size of the line).
10. The Contractor will provide thrust blocks as required per Standards W-640 and W-642, and shall be subject to inspection.
11. The Contractor will arrange for a hydrostatic test to be done by a subcontractor. Piping shall be pressure tested to 225 p.s.i. at the location of the lowest elevation.
12. The Contractor shall arrange for chlorination, (gas or pills), per AWWA Standards, B-301-81.
13. The Contractor shall have water samples taken by a certified testing laboratory. Refer to City of Fullerton Standard Specifications, Section V:49, Page 21 and Sections VI:50 and 51, Pages 21-22.
14. Utility backfill shall be continuously inspected at the sole expense of the Contractor, and the Soils Engineer shall furnish the Owner with a certification that all backfill meets with his recommendations and approval. Refer to City of Fullerton Standard Specifications, Page 9, Section 28; and Page 10, Section 29.
15. All utility line backfill shall be approved by the City of Fullerton and the Soils Engineer as to the type of material and the method of obtaining the required compaction. The Contractor shall, at his sole expense, furnish the backfill material as required. Backfill material shall be compacted to 90% of maximum density.
16. The Contractor shall coordinate the water line construction in such a manner as to prevent any conflicts where utility lines cross each other.
17. Sewer lines may not pass over the top of water lines. Where sewer lines pass beneath water lines with less than three feet, they shall be fully encased in 6-inch minimum thick concrete all around for a minimum distance of ten feet on each side of the crossing. Minimum vertical clearance shall be 12 inches. Minimum horizontal distances between parrallel water and sewer lines shall be ten feet, per Standard W-645.
18. Pressure regulators and services from the meters to the buildings shall be installed by the Contractor if water pressure is more than 80 p.s.i.
19. Fire hydrants shall be per City of Fullerton Standard W-610.
20. The City of Fullerton Water Utility can not guarantee a complete shutdown of existing mains because of age and condition of existing valves. The utility will attempt to shutdown mains as completely as possible. However, the Contractor shall be responsible for dewatering and isolation of construction for testing purposes.
21. THE CURB AND GUTTER SHALL BE CONSTRUCTED PRIOR TO ANY CONSTRUCTION OF WATER IMPROVEMENTS PER THIS PLAN (EXCEPTIONS UPON THE APPROVAL OF WATER ENGINEERING).



WATER FLOW INFORMATION

5-27-82 10:00 A.M.

ORANGETHORPE AVE. 12" MAIN

STATIC	65 P.S.I.
RESIDUAL	50 P.S.I.
FLOW	2432 G.P.M.

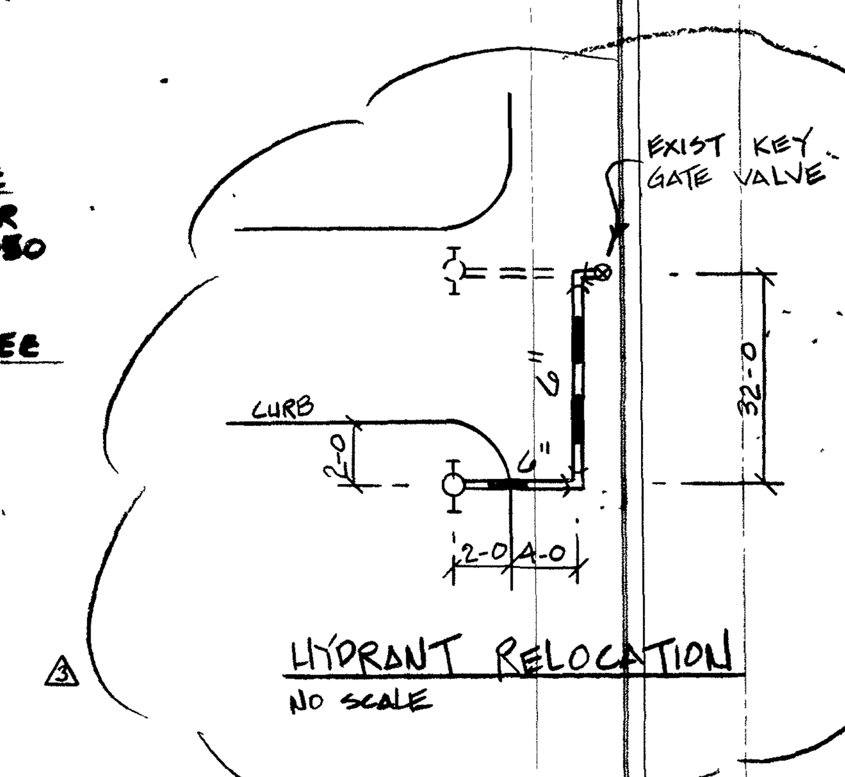
CYPRESS WAY 8" MAIN

STATIC	65 P.S.I.
RESIDUAL	40 P.S.I.
FLOW	2016 G.P.M.

SIMULTANEOUS FLOW

ORANGETHORPE & CYPRESS

STATIC	65 P.S.I.
RESIDUAL	40 P.S.I.
FLOW	4370 G.P.M.



HYDRANT RELOCATION
NO SCALE

PLOT PLAN

SCALE: 1" = 30'-0"

NORTH

AS BUILT

W.D. #1436

ENGINEERING & COMM. DEV. DEPT.
APPROVED

Larry Sears 8/3/82
WATER SYSTEMS ENGINEER DATE

3 Aug '82
DIRECTOR OF ENGINEERING DATE

IF FIRE HYDRANTS ARE REQUIRED TO BE INSTALLED BEFORE CONCRETE CURBS, PLANTERS AND/OR FINAL GRADE HAS BEEN DETERMINED AT THE SITE, ENGINEERING COMPANY WILL NOT BE HELD RESPONSIBLE FOR LOCATION AND/OR ELEVATION OF THE INSTALLED EQUIPMENT.

ACCEPTED BY: ______ DATE: ______
(General Contractor)

NOTES:

1. ALL UNDERGROUND PIPE TO BE 42" MINIMUM COVER.
2. PROVIDE RODS OR CONCRETE BLOCKS AS REQUIRED.
3. 200 PSI HYDROSTATIC TEST FOR 2 HOURS.
4. ALL MATERIAL TO BE U.L. APPROVED.
5. ——— DENOTES EXISTING PIPE.
6. ▬▬▬ DENOTES NEW PIPE.
7. ALL CUTTING, REPATCHING, AND HAULING OF A.C. OR CONCRETE BY OTHERS.
8. ON-SITE FIRE HYDRANTS TO BE PAINTED RED W/1-4" OUTLET & 2-2½" OUTLETS.
9. ON-SITE FIRE HYDRANTS TO PROVIDE 1250 GPM @ 20 PSI EACH.
10. FLOW TWO ON-SITE FIRE HYDRANTS SIMULTANEOUSLY FOR A MAXIMUM FLOW OF 2500 G.P.M.

AS BUILT

CEDARWOODS
ORANGETHORPE AVENUE
FULLERTON, CALIFORNIA

COVE DEVELOPMENT CO.

PACIFIC CONSULTING GROUP

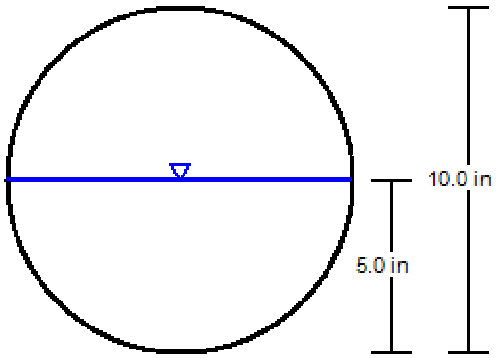
Appendix D
Hydraulic Calculations

2239 State Ave, #B
Costa Mesa, California 92627
(818) 800 6991
Kyle@pacificconsultinginc.com

Cross Section for Existing Max Flow Capacity

Project Description	
Friction Method	Manning Formula
Solve For	Discharge

Input Data	
Roughness Coefficient	0.013
Channel Slope	0.011 ft/ft
Normal Depth	5.0 in
Diameter	10.0 in
Discharge	513.55 gal/min

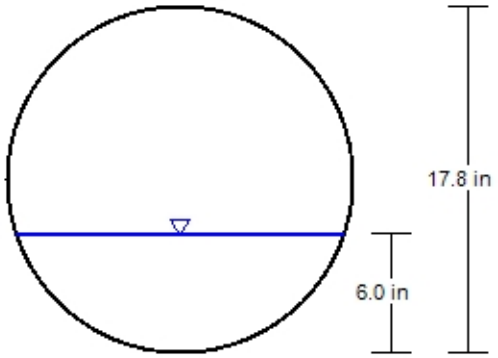


V: 1
H: 1

Cross Section for Proposed Average Flow Capacity FM 5

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data	
Roughness Coefficient	0.013
Channel Slope	0.008 ft/ft
Normal Depth	6.0 in
Diameter	17.8 in
Discharge	1,028.12 gal/min



V: 1
H: 1

Existing Max Flow Capacity

Project Description	
Friction Method	Manning Formula
Solve For	Discharge

Input Data	
Roughness Coefficient	0.013
Channel Slope	0.011 ft/ft
Normal Depth	5.0 in
Diameter	10.0 in

Results	
Discharge	513.55 gal/min
Flow Area	0.3 ft²
Wetted Perimeter	1.3 ft
Hydraulic Radius	2.5 in
Top Width	0.83 ft
Critical Depth	5.7 in
Percent Full	50.0 %
Critical Slope	0.007 ft/ft
Velocity	4.20 ft/s
Velocity Head	0.27 ft
Specific Energy	0.69 ft
Froude Number	1.293
Maximum Discharge	1,104.86 gal/min
Discharge Full	1,027.10 gal/min
Slope Full	0.003 ft/ft
Flow Type	Supercritical

GVF Input Data	
Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	50.0 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	5.0 in
Critical Depth	5.7 in
Channel Slope	0.011 ft/ft
Critical Slope	0.007 ft/ft

Proposed Average Flow Capacity FM 5

Project Description	
Friction Method	Manning Formula
Solve For	Normal Depth

Input Data		
Roughness Coefficient	0.013	
Channel Slope	0.008	ft/ft
Diameter	17.8	in
Discharge	1,028.12	gal/min

Results		
Normal Depth	6.0	in
Flow Area	0.5	ft²
Wetted Perimeter	1.8	ft
Hydraulic Radius	3.4	in
Top Width	1.40	ft
Critical Depth	6.9	in
Percent Full	33.9	%
Critical Slope	0.005	ft/ft
Velocity	4.46	ft/s
Velocity Head	0.31	ft
Specific Energy	0.81	ft
Froude Number	1.298	
Maximum Discharge	4,460.04	gal/min
Discharge Full	4,146.15	gal/min
Slope Full	0.001	ft/ft
Flow Type	Supercritical	

GVF Input Data		
Downstream Depth	0.0	in
Length	0.0	ft
Number Of Steps	0	

GVF Output Data		
Upstream Depth	0.0	in
Profile Description	N/A	
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.0	%
Normal Depth Over Rise	33.9	%
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	6.0	in
Critical Depth	6.9	in
Channel Slope	0.008	ft/ft
Critical Slope	0.005	ft/ft