## APPENDIX I- WATER QUALITY HYDROLOGY SEWER STUDIES

Humphreys & Partners Architects – KPFF Due Diligence Survey- Civil Studies September 12, 2018

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## **CIVIL REPORT [DRAFT]**

DATE: September 12, 2018

TO: Kevin Farrell, The Fifield Companies

Greg Vance, The Fifield Companies

FROM: Brian Powers, P.E., KPFF Consulting Engineers

PROJECT: Monrovia Transit Oriented Development (TOD) Apartments

### 1.0 PROJECT DESCRIPTION

The purpose of this civil report is to summarize the design criteria, storm water management options, existing utility infrastructure, and off-site improvements for the Monrovia TOD Apartments project located at 123 West Pomona Avenue in City of Monrovia. The information provided in this report was based on available public documents provided by LA County and City of Monrovia.

The project is a 1.80-acre site occupied by two existing two-story commercial buildings with the footprints of 10,260 and 9,535 square feet, respectively, and surface parking. The proposed project includes the construction of one mixed-use residential building with seven above grade levels and two-and-one half subterranean levels. The building will include 20,000 square feet of retail space and 322 residential units with approximately 632 subterranean parking spaces.

## **2.0 GENERAL DESIGN CRITERIA**

## 2.1 GOVERNING BUILDING/DEVELOPMENT CODES:

Comply with applicable sections of national, state and local codes, laws, ordinances, rules and regulations of authorities having jurisdiction, including:

- a. State of California Fire Code, current edition
- b. National Fire Protection Association (NFPA), current edition
- c. Standard Specifications for Public Works Construction (SSPWC)
- d. American's with Disability Act (ADA)
- e. American Water Works Association (AWWA)
- f. Uniform Plumbing Code, current edition
- g. National Sanitation Foundation (NSF)
- h. Requirements of the Regional Water Quality Board including local MS4 permit requirements
- i. Monrovia, CA Code of Ordinances
- j. City of Monrovia Storm Water Management and Discharge Control Ordinance
- k. California Building Code
- I. California Mechanical Code
- m. California Plumbing Code
- n. Energy & Utility Systems Requirements

Kevin Farrell and Greg Vance, The Fifield Companies Monrovia Transit Oriented Development (TOD Apartments) KPFF Job #1800368 July 17, 2018 Page 2 of 4

#### 2.2 ACCESSIBILITY FOR THE DISABLED

Accessible (per ADA guidelines) pedestrian pathways shall provide links from the public sidewalk and on-site surface parking to the proposed self-storage building. Accessible ramps may be required and are to be designed in accordance with the current ADA Standards for Accessible Design. All pedestrian pathways within the redevelopment limits shall comply with ADA guidelines for slopes, clear areas, surface materials, surface indicators, lighting, etc.

#### 2.3 GRADING AND DRAINAGE

Slope walks, stairways, ramps and other surfaces away from buildings. Typical slope planes for drainage shall be between 1% and 2%. Other slope standards include:

Within building areas: 1.5% - 2%Terrace and Plaza: 1.9% maximum

• Entrance walks and ramps along path of travel: 4.9% maximum (8.23% maximum with handrails)

Planted slopes: 33% (50% absolute maximum)

#### **2.4 STORM WATER MANAGEMENT**

Based on Chapter 12.36 Storm Water and Urban Runoff and Pollution Control in the Monrovia, CA Code of Ordinances, construction activities and facility operations of development and redevelopment projects are required to comply with the current MS4 Permit (Order No. R4-2012-0175), to lessen the water quality impacts of development by using smart growth practices, and integrate Low Impact Development (LID) practices and standards for storm water pollution mitigation through means of infiltration, evapotranspiration, bio-filtration, and rainfall harvest and use. Unless otherwise exempted in Chapter 12.36 or in the MS4 Permit, the site for every new development and redevelopment project shall comply with Part VI.D.7.c of the MS4 Permit and be designed to control pollutants, pollutant loads, and runoff volume to the maximum extent feasible by minimizing impervious surface area and controlling runoff from impervious surfaces through infiltration, evapotranspiration, bio-retention and/or rainfall harvest and use in accordance with the requirements set forth in the MS4 Permit and the LID Standards Manual.

## 2.5 STORM DRAINAGE

Capacity for drainage structures and piping systems shall be designed to comply with City requirements. The on-site storm water management and water quality treatment system shall be designed based upon Monrovia, CA Code of Ordinances.

#### 2.5.1 SITE DRAINAGE AND HYDROLOGY STUDY

A hydrology study was performed to determine the 24-hour clear runoff volume (cubic feet) of both the existing and proposed site. See attached Exhibit A for calculation results. Complying to the County design hydrologic requirements, the 50-year design storm frequency and 50-year rainfall depth were utilized to conduct the study. The project site has an area of 1.80 acres with a soil type of 6. Through the use of the LA County Public Works HydroCalc program, the existing and proposed 24-hour clear runoff volume was determined to be 40,321.90 cubic feet and 41,698.81 cubic feet, respectively.

Kevin Farrell and Greg Vance, The Fifield Companies Monrovia Transit Oriented Development (TOD Apartments) KPFF Job #1800368 July 17, 2018 Page 3 of 4

#### 2.6 SANITARY SEWER

Sanitary sewer facilities connecting with existing city sewer systems shall be installed to serve each lot and to grades and sizes approved by the City Engineer in accordance with the Monrovia, CA Code of Ordinances. The sewer capacity study is being performed by an on-call consultant for the entirety of the Station Square Area; therefore, the existing sewer capacity is not known. The study is expected to be completed in mid-July. Each development in the area will be asked to pay for a share fee-in-lieu of improvements, or the project will be conditioned to have its own studies performed.

City uses 250 gallons per day (GPD) per residential unit (regardless of the number of bedrooms) to determine the sewer flow. And for the retail, unless it is a restaurant, a multiple of 250 GPD is used based on inspection and the size of the retail. If the space is used as shops/office spaces, all of the fixtures units would be taken into account to determine the equivalent dwelling units. If the equivalent is 5, the sewer generation would be 1,250 GPD for the retail space.

## 2.7 WATER SERVICE

The system shall provide adequate water supply for operation of the project's domestic requirements, irrigation demands, automatic sprinkler systems and on-site fire hydrants (if any). Water mains and fire hydrants connecting to the public water system shall be installed as required by the City Engineer and approved by the City Fire Department. The water capacity study is being performed by an on-call consultant for the entirety of the Station Square Area; therefore, the existing water system capacity is not known. The study is expected to be completed in mid-July. Each development in the area will be asked to pay for a share fee-in-lieu of improvements, or the project will be conditioned to have its own studies performed.

## **3.0 MATERIAL SPECIFICATIONS**

## **3.1 CONCRETE**

- f'c = 2,500 psi 4,000 psi for slab-on-grade.
- Pedestrian pathways and sidewalks: Not less than 4 inches thick, to be further confirmed by the project geotechnical engineer.
- Driveways and areas subject to vehicle loading: Per the project geotechnical engineer's recommendation.

### **3.2 ASPHALT CONCRETE PAVEMENT**

• PG 64-10 conforming to Section 92 of the Caltrans Standard Specifications and in accordance with SSPWC Section 203-6.5. Paving, base course and sub-grade preparation will be as recommended by the project geotechnical engineer.

### 3.3 STORM DRAIN

- Polyvinyl Chloride Pipe (PVC SDR 35)
- Reinforced Concrete Pipe (RCP)

Kevin Farrell and Greg Vance, The Fifield Companies Monrovia Transit Oriented Development (TOD Apartments) KPFF Job #1800368 July 17, 2018 Page 4 of 4

#### **3.4 SANITARY SEWER**

• Gravity sewer to be PVC SDR 35

#### 3.5 DOMESTIC AND FIRE WATER SERVICE

- Pipe sizes up to 3 inches shall be copper water tubes, Type L hard, ANSI H23.1, ASTM B 88, IAPMO IS.
- Pipe sizes 4 inches and larger shall be PVC AWWA C900 water main pipe material pressure class 200 (DR 14) with cast iron pipe equivalent OD.

## **4.0 OFF-SITE IMPROVEMENTS**

Based on the preliminary site plan dated April 26, 2018, the project off-site improvements include closing the existing driveways and constructing a new driveway on Evergreen Avenue and a new driveway on Primrose Avenue. An area wide traffic study is being performed and City will determine the roadway and sidewalk widening requirements in the project vicinity. It is expected that reconstruction will be required for the streets surrounding the project, as they are all under moratorium. Each development in the area will be asked to pay for a share fee-in-lieu of improvements or the project will be conditioned to have its own studies performed. The anticipated improvements include two new traffic signals and intersection modifications. The improvement costs will be split into a development cost per units or traffic trip generation based on the proposed development.

Based on our finding, the eastern 200 feet of Evergreen Avenue in the project frontage is in Caltrans right of way. It is our understanding that any improvements within the above-mentioned limit will require a Caltrans encroachment permit.

#### **5.0 EXISTING UTILITY INFRASTRUCTURE**

Based on the City of Monrovia Engineering Department drawing number C-1475 dated August 1964, drawing number C-1539 dated July 1965, and drawing number C-1598 dated November 1966, the following wet utility infrastructure exists in the public right of way:

- Pomona Avenue
  - o One 2 M.T.D. Telecom conduit
  - o One 3-inch gas line
  - o One 8-inch VCP sewer line
  - One 8-inch C.I. water line
  - One 2-inch C.I. water line (abandoned)
- Primrose Avenue
  - o One 3-inch gas line
  - o One 8-inch VCP sewer line
  - One 6-inch C.I. water line
  - o One 87-inch RCP storm drain line
  - o One 8 M.T.D. Telecom conduit
- Evergreen Avenue
  - o One 8-inch C.I. water line

Due to the pending status of sewer, water, and traffic studies, the project impact to the utility usage and right of way limit will be determined when the studies are finalized.

## **EXHIBIT A-1**

## **Peak Flow Hydrologic Analysis**

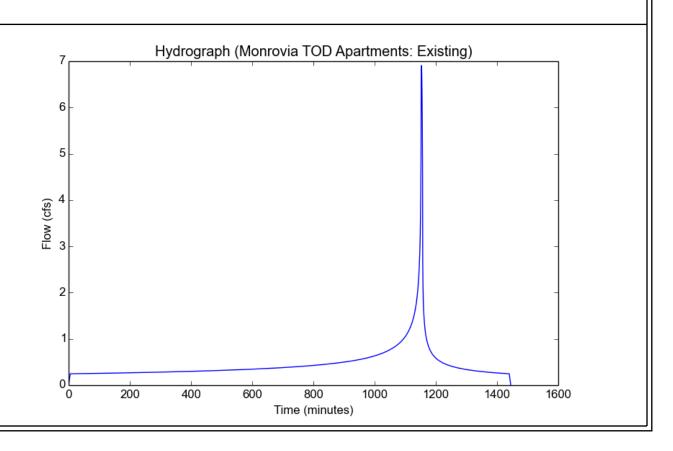
File location: P:/2018/1800368 Monrovia TOD Apartments/ENGR/STORM/HydroCalc/2018-08-30 HydroCalc Report.pdf Version: HydroCalc 1.0.2

Input	<b>Param</b>	eters
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Project Name	Monrovia TOD Apartments
Subarea ID	Existing
Area (ac)	1.8
Flow Path Length (ft)	246.73
Flow Path Slope (vft/hft)	0.03
50-yr Rainfall Depth (in)	7.15
Percent Impervious	0.9548
Soil Type	6
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

## **Output Results**

Modeled (50-yr) Rainfall Depth (in)	7.15
Peak Intensity (in/hr)	4.2659
Undeveloped Runoff Coefficient (Cu)	0.8867
Developed Runoff Coefficient (Cd)	0.8994
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	6.9061
Burned Peak Flow Rate (cfs)	6.9061
24-Hr Clear Runoff Volume (ac-ft)	0.9257
24-Hr Clear Runoff Volume (cu-ft)	40321.9006



## **EXHIBIT A-2**

## **Peak Flow Hydrologic Analysis**

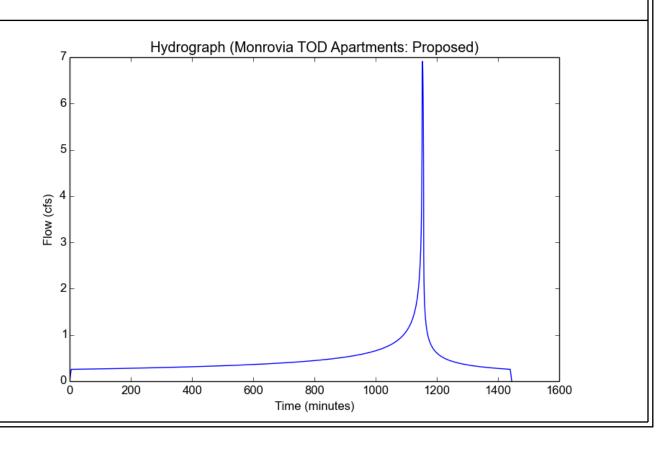
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Input	<b>Param</b>	eters
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Project Name	Monrovia TOD Apartments
Subarea ID	Proposed
Area (ac)	1.8
Flow Path Length (ft)	246.73
Flow Path Slope (vft/hft)	0.03
50-yr Rainfall Depth (in)	7.15
Percent Impervious	1.0
Soil Type	6
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

## **Output Results**

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Modeled (50-yr) Rainfall Depth (in)	7.15
Peak Intensity (in/hr)	4.2659
Undeveloped Runoff Coefficient (Cu)	0.8867
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	6.9107
Burned Peak Flow Rate (cfs)	6.9107
24-Hr Clear Runoff Volume (ac-ft)	0.9573
24-Hr Clear Runoff Volume (cu-ft)	41698.8131



## -APPENDIX-

## Will Serve Letter Only



Your project is located in Southern California Edison (SCE) service territory. SCE will serve the above subject project's electrical requirements per the California Public Utilities Commission and Federal Energy Regulatory Commission tariffs.

SCE may need to conduct utility studies, where applicable, to assess whether additions or modifications to the existing electric infrastructure are required to serve this project. Where applicable, SCE has attached Appendix (B) which not only describes the study, and permitting, but includes a Project Information Sheet that will need to be completed by you and submitted to SCE if your project is at a point where SCE has to determine the required electrical utility work. This Will-Serve letter does not imply that either: (i) these studies have been completed, or (ii) that any required California Environmental Quality Act (CEQA) analysis of project-related electric utility impacts has been conducted.

I am the SCE Design Representative currently assigned to this project. SCE or Applicant will design and construct all required electrical infrastructure to serve this project provided you enter into the applicable contractual agreements with SCE identify scope of electrical utility work required, and supply the following information:

- Site plans as required
- Required contracts and agreements (fully executed)
- Applicable fees
- Local permits
- Required easement documents

Your project will be scheduled for construction once SCE has all the necessary information for your project and you have submitted or agreed to the applicable requirements as stated above, and paid any necessary fees.

If your project will not require SCE services, please notify us so that we can update our records.

SCE appreciates your business. If you have any questions, please feel free to call me at

Sincerely,

Antoine Williams

SCE Design Representative

Enclosure: Appendix B, where applicable

Rev. 07/09/12 DS-125

## Appendix B



As your Southern California Edison (SCE) Design Representative for this project, I am committed to providing you with excellent customer service. The following information is intended to help explain SCE's planning and permitting process for the electric infrastructure needed to serve your Project.

Depending on the scope of work necessary to serve your project (electric facility installation, removal, relocation, rearrangement and/or replacement), it may be necessary for you to submit an Advanced Engineering Fee. This Fee will be applied to certain expenses associated with preliminary design and engineering work required to estimate the cost for SCE to perform the electric work associated with your project. Please note: Depending on factors such as resource constraints, construction or relocation of SCE facilities requirements, the need for environmental review, and so forth, delays in meeting your projected completion date may occur. To help minimize the potential for delays it is imperative that you provide all requested information as early as possible.

If the project results in the need for SCE to perform work on SCE electrical facilities that operate at between 50 and 200 kilovolts (kV), please be advised these facilities are subject to the California Public Utilities Commission's (CPUC's) General Order 131-D (GO 131-D) Permit to Construct (PTC) requirements. For the CPUC PTC review, the CPUC acts as the lead agency under the California Environmental Quality Act (CEQA). Depending on the scope of SCE's work, certain exemptions to the PTC requirements may be available. If no exemptions are available, the PTC application preparation and environmental approval process could take a minimum of 24 - 48 months.

If you anticipate that your project will require work to be performed on SCE electrical facilities operated at between 50 kV and 200 kV, please inform me at your earliest possible convenience for further assistance to determine the potential G.O.131-D permitting requirements and/or permitting exemption(s).

In order for SCE to determine the required electrical utility work necessary to support your project, and to determine any permitting requirements and costs associated with constructing these facilities, project plans and a completed Customer Project Information Sheet will need to be submitted.

If you have any additional questions, please feel free to call me at

Sincerely,

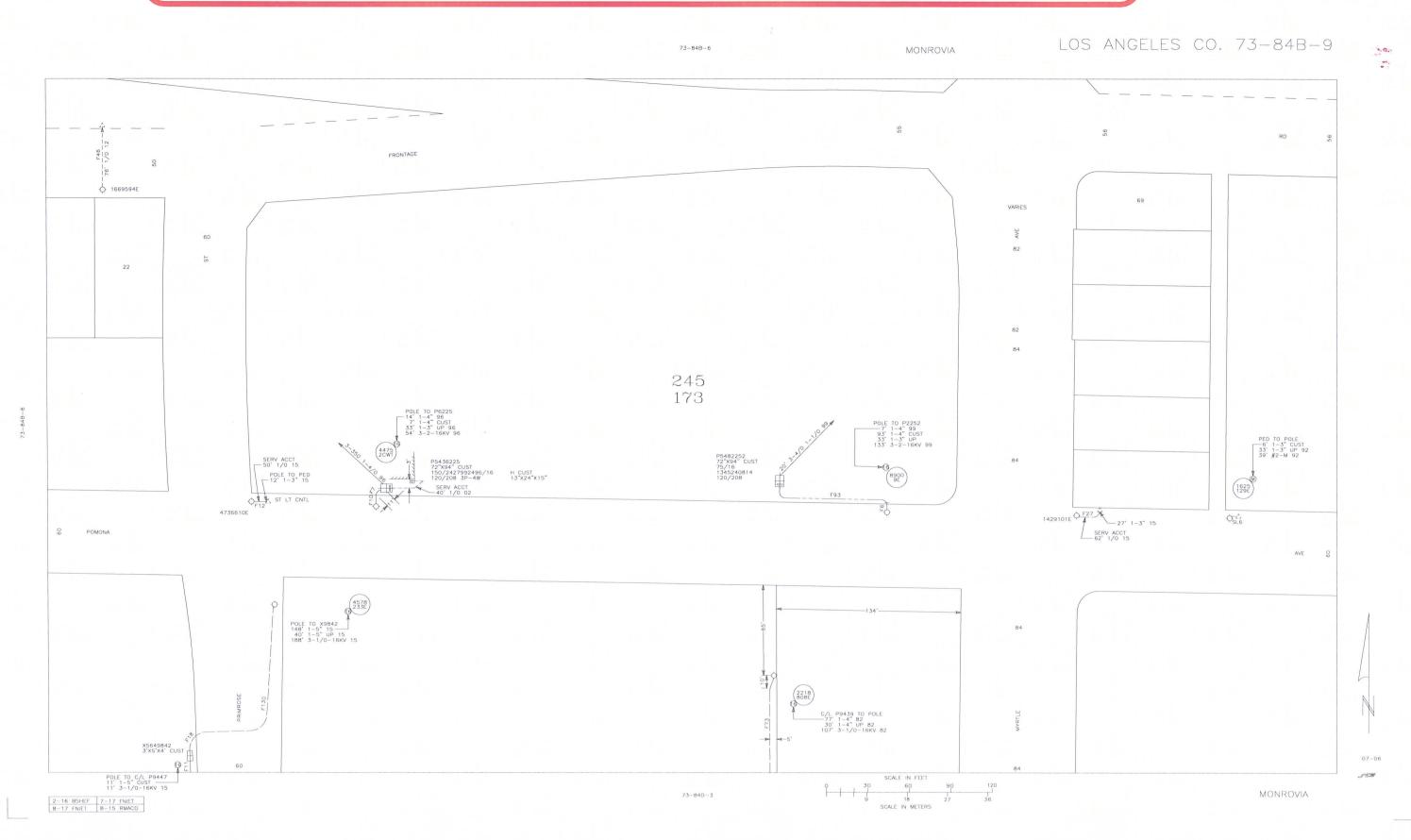
Antoine Williams

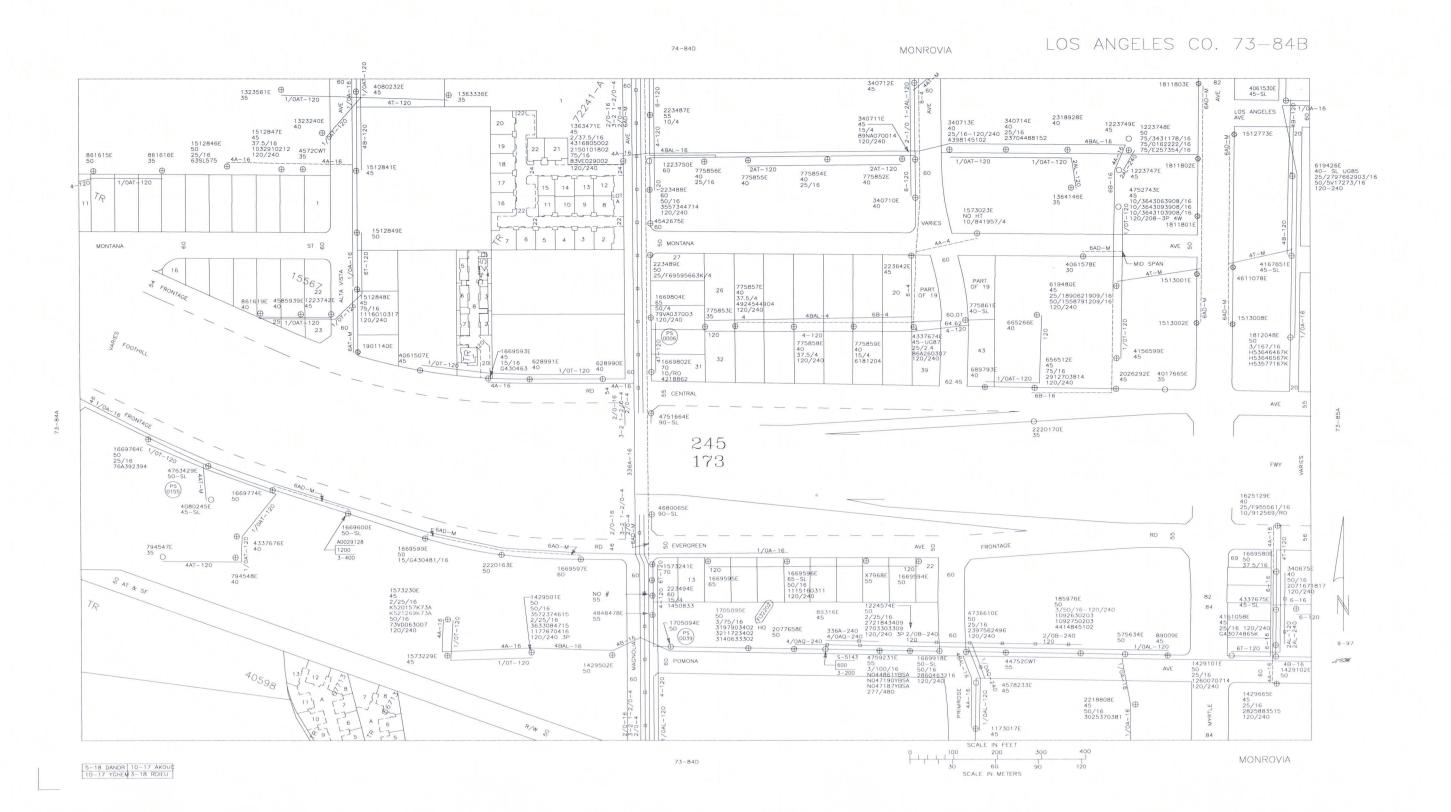
SCE Design Representative

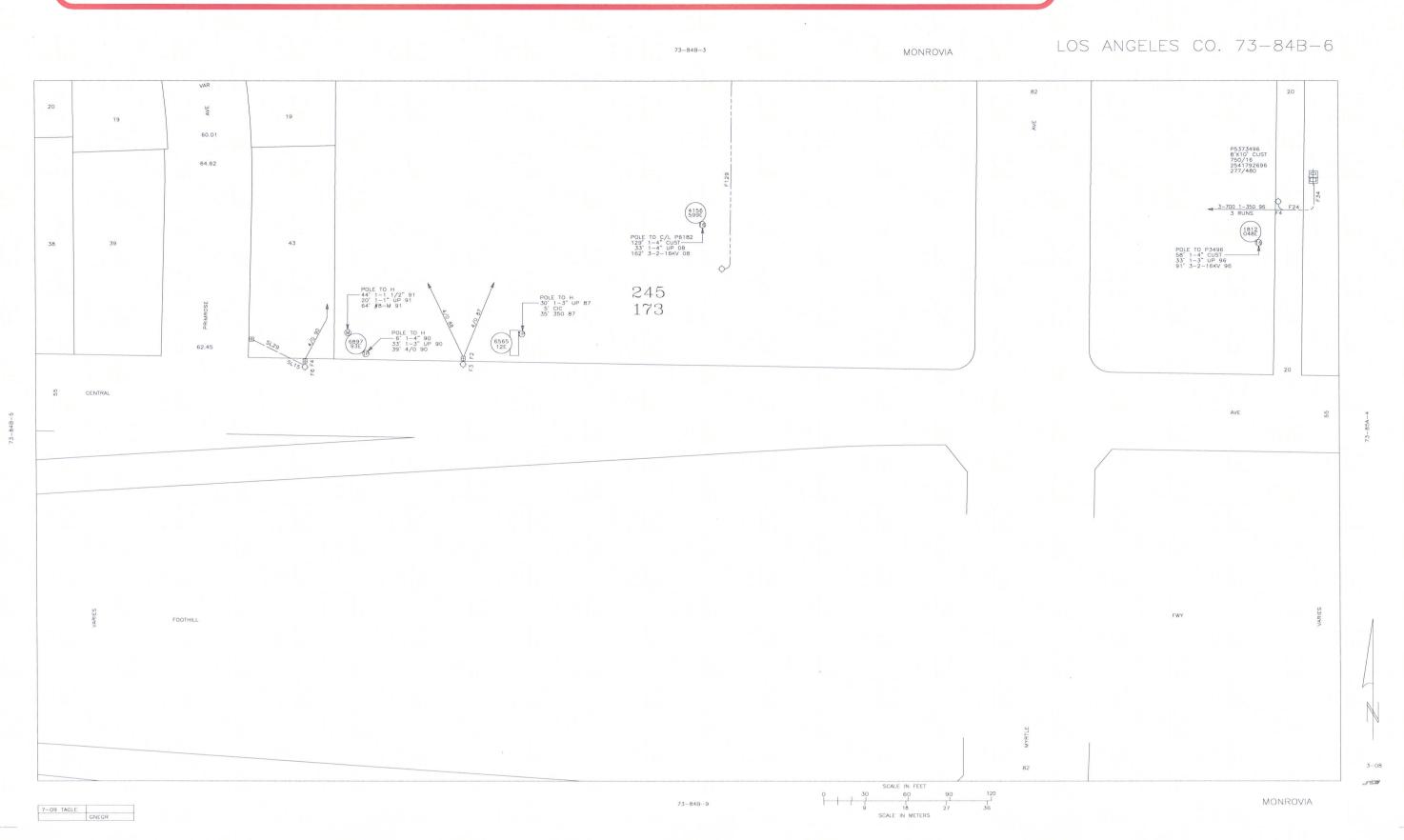
Rev. 07/09/12 DS-125-1

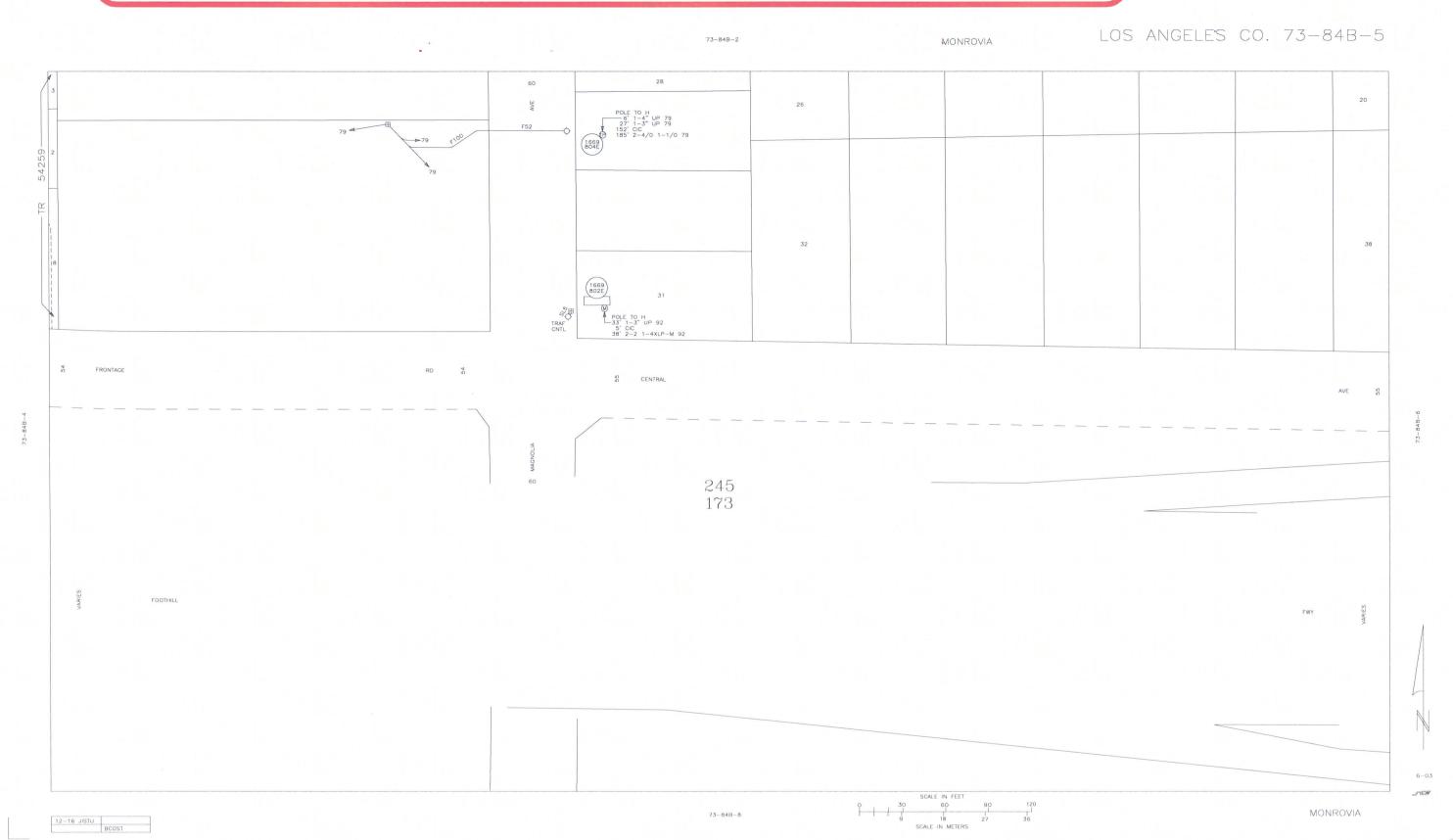
LOS ANGELES CO. 73-84D ARCADIA MONROVIA 73-84B O 1512302E 40 1512303E 35 245 173 2288482E 55 15/831050886/16 25/831091943/16 0 4BAL-16 , 1224360E 100 VARIES 1901118E 419 207 519 800 MONROVIA 6-18 FNIET | 6-18 FNIET | 6-18 IRODR | 6-18 AALMA

123 W. Pomma Ave. Pg. 1









LOS ANGELES CO. 73-84B-8 73-84B-5 MONROVIA P5358331 6'X8' CUST 150/16-120/208 3P-4W STATE (FOOTHILL FWY) 2220 163E (FRONTAGE ROAD) AVE CAP TO POLE 5' 1-3" 03 245 173 POMONA So A To The South of the South MONROVIA 73-84D-2 04-07 TAGLE 8-09 SSARM 9-06 D4006



October 04, 2018

FRC Realty
Attn: Greg Vance
1250 6th Street, Suite 403
Santa Monica, CA 90401
c/o
Whitenack Consulting, Inc.
Mary Whitenack
1404 North Tustin Avenue, #B-1
Santa Ana, CA 92705

Attn: Greg Vance

Reference: This is the site of a proposed new multi-use project (residential and commercial) located at 123 W. Pomona Ave., Monrovia, CA 91016

The land for the above-mentioned address is in the Frontier Communications serving area. In accordance with California PUC Rules and Tariffs, Frontier's current plan for this project is to provide telephone, video and data services.

This commitment however is contingent upon the owner/developer fulfilling the terms and conditions of our tariff rule schedules. Such requirements include but are not limited to Rule Number 27 on file with the State of California Public Utilities Commission.

Please accept this letter as "Frontier's Intention to Serve" your project.

If you have any questions or if I may assist you in any manner, please contact me at 909-469-6333

Very truly yours,

ENGINEER, NETWORK SR 1400 E. Phillips Blvd.

James Bollier

Pomona, CA 91766 Office: 909-469-6333 jim.bollier@ftr.com

JB: mlk



## Will Serve Letter

9/26/2018

Greg Vance FRC Realty 1250 6th Street, Suite 403 Santa Monica, CA 90401

Project Name: WSL - 123 W Pomona Ave

LOCATION: 123 W Pomona Ave, Monrovia, CA 91016

Re: May Serve Letter by Charter Communications or an affiliate authorized to provide service ("Charter")

Thank you for your interest in receiving Charter service. The purpose of this letter is to confirm that the Property is within an area that Charter may lawfully serve. However, it is not a commitment to provide service to the Property. Prior to any determination as to whether service can or will be provided to the Property, Charter will conduct a survey of the Property and will need the following information from you:

- Exact site address and legal description
- Is this an existing building or new construction?
- Site plans, blue prints, plat maps or any similar data
- The location of any existing utilities or utility easements

Please forward this information to the construction manager listed below. Upon receipt, a Charter representative will be assigned to you to work through the process. Ultimately, a mutually acceptable service agreement for the Property will be required and your cooperation in the process is appreciated.

## **Construction Manager Contact:**

Dianna Netherlain
SoCal Central Specialist, Business Development
3430 E Miraloma Ave
Anaheim CA 92806
714-414-1454

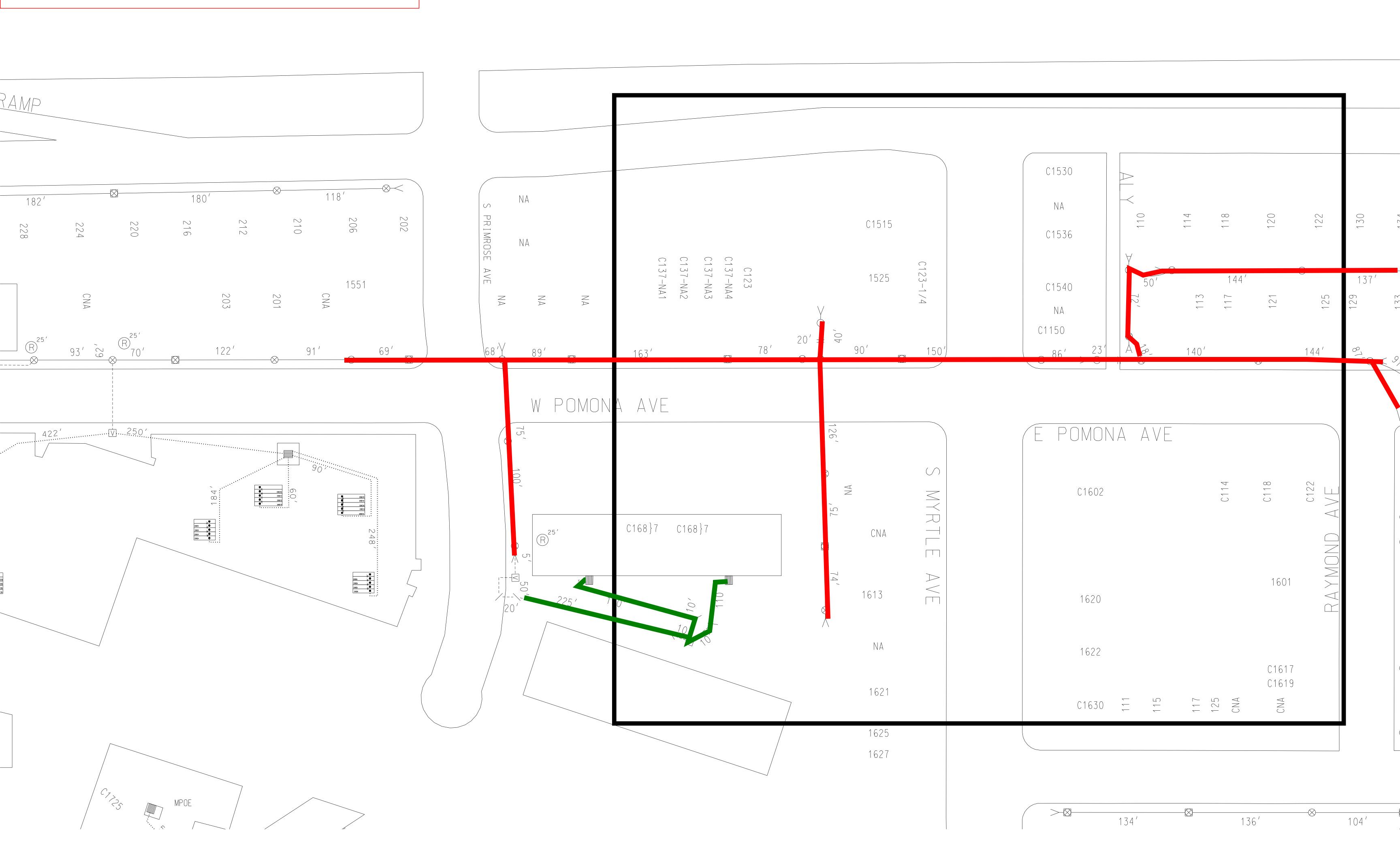
dianna.netherlain@charter.com

Sincerely,

Dianna Netherlain

123 W Pomona Ave MAP Monrovia, CA 91016 Red-existing Charter aerial facilities within project limits.

Green-existing Charter underground facilities within project limits.





September 27, 2018

Whitenack Consulting, Inc 1404 North Tustin Ave, Unit A-1 Santa Ana, CA 92705

Attn: Mary Whitenack

Subject: Will Serve letter and Map Request for 123 W. Pomona Ave; Monrovia

Thank you for inquiring about the availability of natural gas service for your project. We are pleased to inform you that Southern California Gas Company (SoCalGas) has facilities in the area where the above named project is being proposed. The service would be in accordance with SoCalGas' policies and extension rules on file with the California Public Utilities Commission (CPUC) at the time contractual arrangements are made.

This letter should not be considered a contractual commitment to serve the proposed project, and is only provided for informational purposes only. The availability of natural gas service is based upon natural gas supply conditions and is subject to changes in law or regulation. As a public utility, SoCalGas is under the jurisdiction of the Commission and certain federal regulatory agencies, and gas service will be provided in accordance with the rules and regulations in effect at the time service is provided. Natural gas service is also subject to environmental regulations, which could affect the construction of a main or service line extension (for example, if hazardous wastes were encountered in the process of installing the line). Applicable regulations will be determined once a contract with SoCalGas is executed.

If you need assistance choosing the appropriate gas equipment for your project, or would like to discuss the most effective applications of energy efficiency techniques, please contact our area Service Center at 800-427-2200.

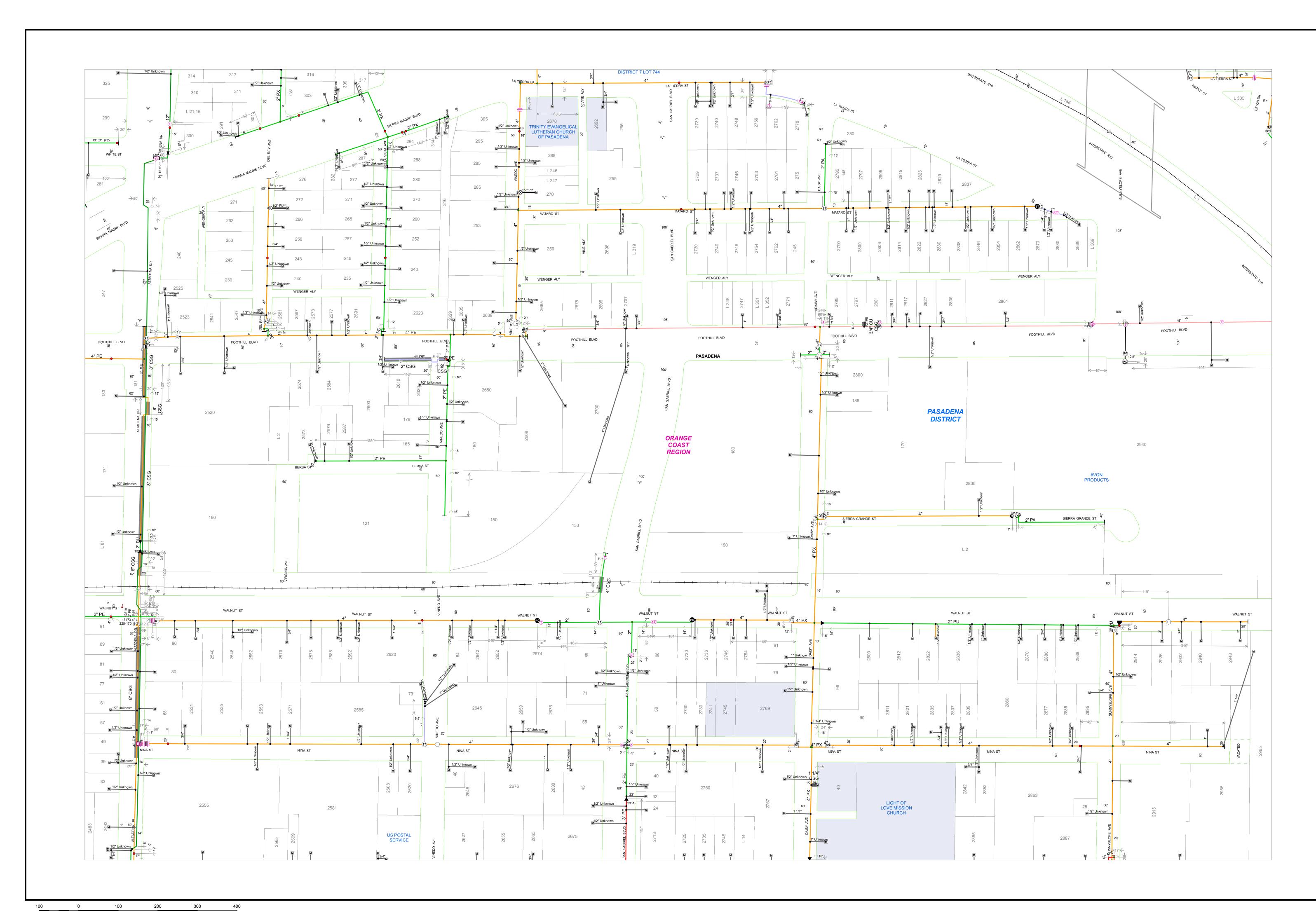
Thank you again for choosing clean, reliable, and safe natural gas, your best energy value.

Katrina Regan

**Planning Supervisor** 

SouthEast Region - Anaheim Planning & Engineering

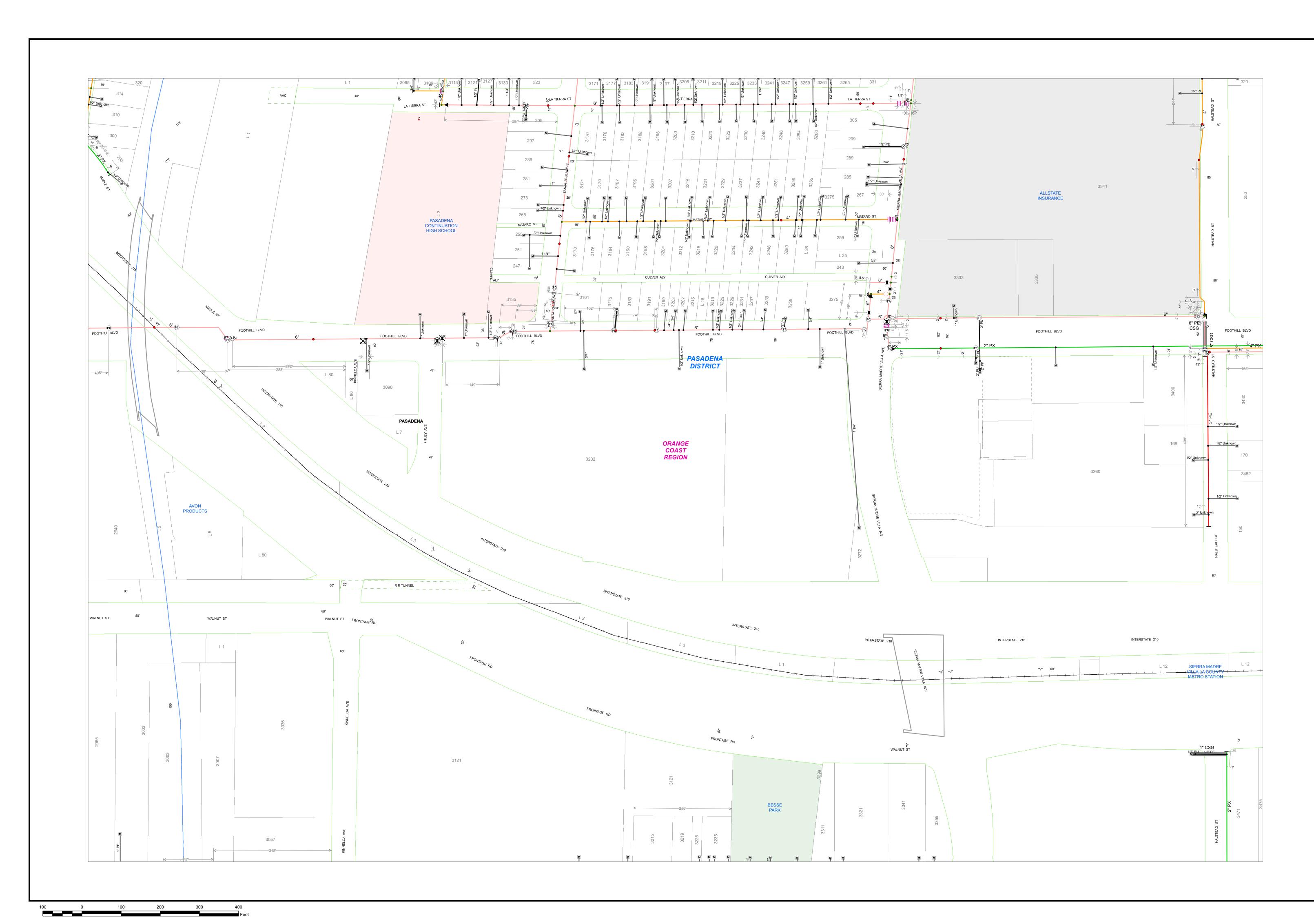
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Gas Asset Map
User
9/27/2018

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	LIABILITY STATEMENT  The facilities and their depiction on these maps are believed to be reasonably accurate, but the maps are not to be used in lieu of field verification or calling USA at 800-422-4133. NO WARRANTY expressed or implied (including of merchantability or of fitness for particular purpose) is made as to any matter, USA at 800-422-4133. NO WARRANTY expressed or implied (including of merchantability or of absence, the accuracy of the maps, the means used to transmitted to, the design, size, type or location of the facilities, their presence of absence of viruses (if transmitted electronically, by disk or diskette), data translation or transmission errors or omissions, compatibility with the user's system or its ability to interpret the data correctly or at all, or any other matter. The Gas Company has no liability for damages (direct, indirect, consequential, incidental or punitive) arising from the transmission, receipt or use by others of the maps or information contained in the maps.





1 inch = 100 feet				
Grid ID	Gas Asset Map	User	9/27/2018	
ber:		:/	ate:	



**Luis Ramirez**Pipeline Planning Assistant

9400 Oakdale Ave Chatsworth, CA 91311

LRamirez5@semprautilities.com

September 26, 2018

WHITENACK CONSULTING INC. 1404 North Tustin Avenue, Unit B-1 Santa Ana, CA 92705

Email: Mary Whitenack - utilitiescons@yahoo.com

Subject: WILL SERVE LETTER AND MAP REQUEST for FRC Realty - Mixed Use Project

located at 123 W. Pomona Ave., Monrovia, CA 91016

**DCF:** 1505-18NC1168

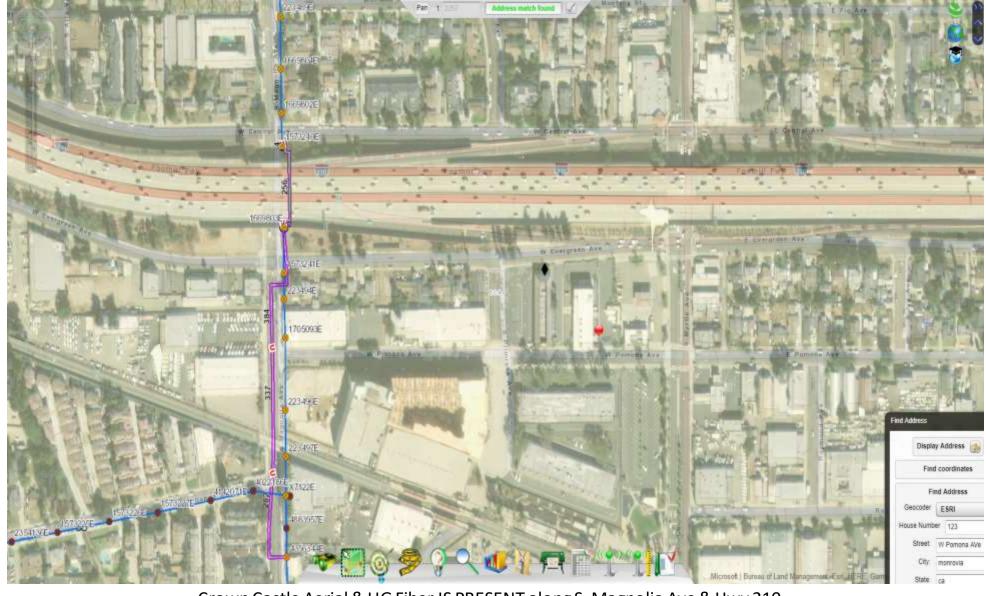
The Transmission Department of SoCalGas does not operate any facilities within your proposed improvement. However, SoCalGas **Southeast** Distribution Region may maintain and operate facilities within your project scope.

To assure no conflict with the **Southeast** Distribution's pipeline system, please e-mail them at **SCGSERegionRedlandsUtilityRequest@semprautilities.com**.

Sincerely,

Luis Ramirez
Pipeline Planning Assistant
<u>LRamirez5@semprautilities.com</u>
(818) 701-4546

September 26, 2018 1 of 1



Crown Castle Aerial & UG Fiber IS PRESENT along S. Magnolia Ave & Hwy 210.

Whitenack Consulting Inc.

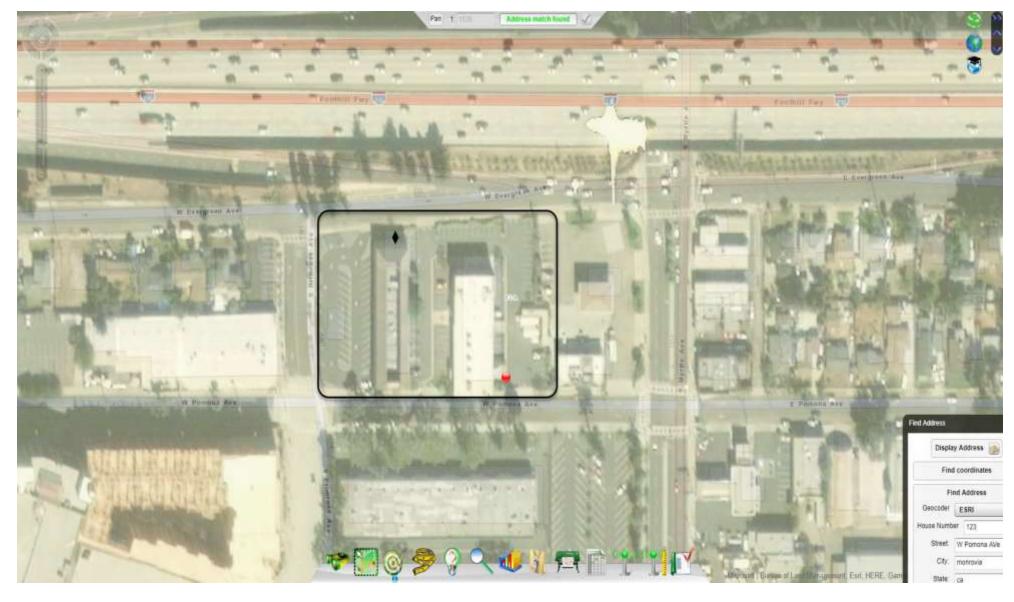
Project: Map Request for FRC Realty, Mixed Use Project located at 123 W Pomona Ave.

Monrovia, CA UTR-0918-119

## **David Antol**

Utility Coordinator 2000 Corporate Dr.l Canonsburg, PA 15317 Fiber.dig@crowncastle.com





Crown Castle Aerial & UG Fiber is NOT PRESENT at 123 W Pomona Ave.

Whitenack Consulting Inc.

Project: Map Request for FRC Realty, Mixed Use Project located at 123 W Pomona Ave.

Monrovia, CA UTR-0918-119

## **David Antol**

Utility Coordinator 2000 Corporate Dr.l Canonsburg, PA 15317 Fiber.dig@crowncastle.com



# Map Key



Whitenack Consulting Inc.

Project: Map Request for FRC Realty, Mixed Use Project located at 123 W Pomona Ave.

Monrovia, CA

UTR-0918-119

## **David Antol**

**Utility Coordinator** 

2000 Corporate Dr.l Canonsburg, PA15317 Fiber.dig@crowncastle.com



## Google Maps COLOR KEY FOR CROWN AND SUNESYS



Yellow Aerial Fiber As Built

UG Purple

As Built

Brown UG As Built

DK Blue Leased

Exact UG Conduit Red

SUNESYS

Blue

Aerial Fiber

Green

UG

Magenta Proposed Fiber

Red

Leased/Managed Fiber



Whitenack Consulting Inc.

Project: Map Request for FRC Realty, Mixed Use Project located at 123 W Pomona Ave.

Monrovia, CA

UTR-0918-119

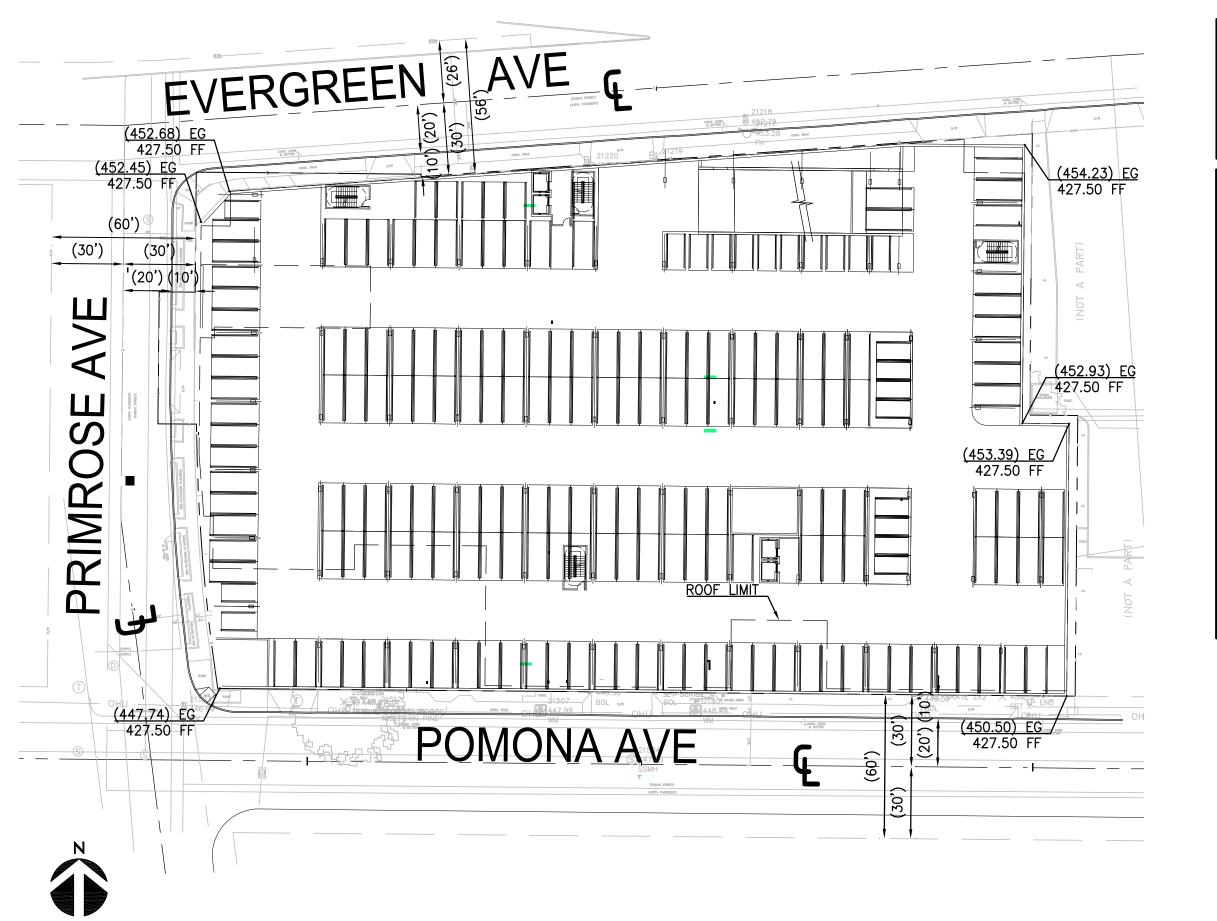
## **David Antol**

**Utility Coordinator** 

2000 Corporate Dr.l Canonsburg, PA 15317

Fiber.dig@crowncastle.com





## **MONROVIA TOD APARTMENTS**

Monrovia, California 17571

SCALE: 1"=40'

**EXCAVATION PLAN** 

## NOTE TO CONTRACTOR:

PER GEOTECH REPORT.

- PROPOSED BUILDING SHALL BE EXCAVATED TO A MINIMUM DEPTH OF 3 FEET BELOW THE BOTTOM OF ALL FOOTINGS.
- SLABS SHOULD BE AT LEAST 4 IN. THICK. - EXCAVATION PLAN REFLECTS EXCAVATION FROM EXISTING GRADE TO FINISHED FLOOR. FLOOR SLAB THICKNESS, BASE MATERIAL, ETC. NOT FACTORED INTO EARTHWORK.

## ESTIMATED EARTHWORK QUANTITIES

80,000 CUBIC YARDS FILL: O CUBIC YARDS

NET (CUT/FILL):

80,000 CUBIC YARDS

- THE ESTIMATED QUANTITIES PROVIDED ABOVE ARE TO BE USED FOR JURISDICTIONAL PLAN CHECKING AND PERMITTING PURPOSES ONLY.
- 2. ESTIMATED EARTHWORK ABOVE IS BASED ON DESIGN FINISH GRADES TO EXISTING GRADES AND/OR CONTOURS AS PROVIDED ON THE BASE SURVEY. THE ESTIMATED EARTHWORK DOES NOT ACCOUNT FOR THE THICKNESS OF PAVEMENTS, FOUNDATIONS AND SLABS ON GRADE, FOOTINGS, CLEARING AND GRUBBING, OVER EXCAVATION AND RECOMPACTION, AND CONSTRUCTION MEANS AND METHODS.
- THE ESTIMATED EARTHWORK QUANTITIES DO NOT INCLUDE SHRINKAGE AND/OR EXPANSION FACTORS DUE TO COMPACTION OR OVER EXCAVATION QUANTITIES.
- THE CONTRACTOR SHALL CALCULATE HIS OWN EARTHWORK QUANTITIES NECESSARY FOR HIS BID AND WORK.
- ESTIMATED EARTHWORK QUANTITIES ABOVE ASSUME THAT ALL ONSITE MATERIALS ARE SUITABLE FOR BACKFILLING. HOWEVER, ACTUAL EXISTING ONSITE MATERIALS AND IMPORTED MATERIALS MUST FIRST BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO INSTALLATION, REMOVAL, OR REPLACEMENT.
- EARTHWORK QUANTITY INCLUDES A 20% CONTINGENCY AND IS ROUNDED UP TO THE NEAREST HUNDREDTH.