



State of California Public Utilities Commission

CPUC Form of Intent

(Application for Conversion of Master-Meter Service at Mobilehome Park or
Manufactured Housing Community to Direct Service from Electric or Gas Corporation)

① HCD ID: 40-0166-MP **IMPORTANT: FORMS SUBMITTED PAST 03/31/2025 MAY NOT BE INCLUDED IN PROGRAM**

Park/Community Property Name and Address

Chumash Village(Mobile Home Park)
Chumash Village Homeowners'Association, Inc.
3057 S Higuera St.
San Luis Obispo, CA 93401

Park/Community Property Owner Name and Address

Chumash Village Homeowners'Association, Inc.
3057 S Higuera St.
San Luis Obispo, CA 93401

② Do you intend on participating in the master-meter service conversion program? Yes ☒ No ☐

(If you do not intend on participating in this program then do not complete the rest of this application, but please sign at ⑭ and submit it to the CPUC and the utility(ies) per instructions on the back of this page. Otherwise, you **MUST** complete the remainder of this form.)

③ Is the park currently enrolled in the MHP Upgrade Pilot Program? Yes ☒ No ☐ Unknown ☐

(If the park is already enrolled, please complete items ④, ⑤, ⑫, and ⑬, sign at ⑭ and submit it to the CPUC and the utility(ies) per instructions on the back of this page.)

④ Are any plans underway by the property owner and/or others to sell the property or convert land use? Yes ☐ No ☒

⑤ Total HCD Permitted Spaces: 235 Occupied Spaces: 234 Unoccupied Spaces: 1 (TBD) RV Spaces: 0

Master-Meter Gas and Electric System Information (Please attach additional pages as necessary)

⑥ Is there master-metered electric service at this property(Y/N)? Y Intent to convert service(Y/N)? If yes, then:

Number of Spaces with Electric Sub-Meters: Installation date of master-meter electric system:

Typical Amps per electric pedestal at each space: Electric service type: Underground ☐ Over-head ☐ Combination ☐

Electric Utility: SCE ☐ PG&E ☐ Bear Valley ☐ SDG&E ☐ Pacific Power ☐ Liberty Utilities ☐ Other/Municipal ☐

⑦ Is there master-metered gas service at this property(Y/N)? Intent to convert service(Y/N)? If yes, then:

Number of Spaces with Gas Sub-Meters: Installation date of master-meter gas system:

Master-meter gas system pressure (psi): Locations of gas mains: Yard Easement ☐ Street ☐ Under Coach ☐ Other ☐

Natural Gas Utility: PG&E ☐ SoCalGas ☐ SDG&E ☐ Southwest Gas ☐ Other/Municipal ☐

⑧ Cathodic Protection (CP) system installed on gas system(Y/N)? If yes, please indicate CP type: Impressed ☐ Sacrificial ☐ Both ☐

⑨ Please indicate the length in feet of the following pipeline materials in your gas distribution system:

Coated Steel: Bare Steel: Polyethylene (PE): Polyvinyl Chloride (PVC): Other:

⑩ What maps of the master-metered system(s) do you have: Gas only ☐ Electric only ☐ Gas & Electric ☐ None ☐

⑪ Is any part of the property currently provided with direct gas or electric service by the local utility? Yes ☐ No ☐

If yes, please provide details: Number of electric spaces directly served: Number of gas spaces directly served:

If known, the date when the directly serving gas or electric system was installed:

⑫ Excluding repairs, has any portion of the gas or electric system been replaced within the last 20 years? Yes ☐ No ☒

If yes, please provide details of the replacement and when it occurred:

⑬ Has the electric or gas system been damaged by a natural disaster or fire in the last 10 years? Yes ☐ No ☒

If yes, please provide details of the damage and when it occurred:

Property Owner(s) Pledge

Upon execution of this application, I will maintain, or cause to be maintained, a record of all revenues from operation of the master-meter system(s) and all expenditures for operation and/or maintenance of said system(s) which I voluntarily elect to convert to direct utility service at the mobile-home park or manufactured housing community identified above. I pledge to use all such revenues only towards the operation and maintenance of said system(s) until conversion to direct utility service is complete.

I hereby declare under penalty of perjury that the foregoing information is true and correct to the best of my knowledge.

⑭ Signature: Date: 3/28/25 Print Name and Title: Duane Livingston

⑮ Note: Please submit the completed Form of Intent to the CPUC.

HDA BOARD
PRESIDENT
805-701-2662

PLEASE SEE ALSO THE ATTACHED: 3/28/25 COVER LETTER
AND "ATTACHMENT 1"
"ATTACHMENT 4"

Instructions - CPUC Form of Intent

(Instructions for completing the Application for Conversion of Master-Meter Service at Mobilehome Park or Manufactured Housing Community to Direct Service from Electric or Gas Corporation)

(NOTE: CPUC Form of Intent can also be completed and submitted online – please see the Utility Contact List)

- ① **HCD ID** refers to the Housing and Community Development (HCD) Permit Number for your MHP park/community.
- ② **Do you intend on participating in the master-meter/sub-metered service conversion program?**
The conversion to direct service program is completely voluntary. If you do not intend on participating in the program, then please provide information up to item ②, sign and date the form at item ⑭ and submit it to the CPUC.
If you do intend to participate in the program, then please continue completing items ③ through ⑭.
- ③ **Is the park already enrolled in the MHP Utility Conversion Program?** If you received a notice that your park was accepted into the Program as a Category 1, 2, or 3, please mark yes. Complete only items ④, ⑤, ⑫, and ⑬, sign at ⑭ and submit this Form to the CPUC
- ④ **Are there any plans underway by the property owner and/or others to sell the property or convert land use?**
Do the owner(s) of the MHP or anyone else have plans underway to sell the property or convert the park for other uses? Please provide details on an additional sheet if you have plans underway to sell the property or convert land use.
- ⑤ **Total Spaces** refers to the total number of mobilehome lots shown on the HCD permit. This does not include RV spaces.
Occupied Spaces: Out of the number of spaces indicated in "Total Spaces", how many are currently occupied by residents?
Unoccupied Spaces: Out of the number of spaces indicated in "Total Spaces", how many are currently vacant?
RV Spaces: How many spaces are available for RVs, whether occupied or unoccupied? If your park does not have any RV spaces, please indicate zero.
- ⑥ **Is there master-metered electric service at this property? Intent to convert service?**
Do you have master-metered electric service at your park, if so, do you intend to have it converted to direct service from the utility? Provide as much information as possible: number of spaces with master-metered electric service, installation date of the master-meter system, serving electric utility, typical amps per electric panel received by most residential spaces, and if master-meter service is undergrounded, over-head, or combination of these two methods.
- ⑦ **Is there master-metered gas service at this property? Intent to convert service?**
Do you have master-metered gas service at your park, if so, do you intend to have it converted to direct service from the utility? Provide as much information on the gas service as possible: spaces with gas service risers, installation date of gas system, serving gas utility, master-meter gas system pressure in psi, and location of master-meter gas mains (e.g., yard easement or street).
NOTE: A MHP MUST HAVE EITHER GAS OR ELECTRIC MASTER-METER OR BOTH TO QUALIFY.
- ⑧ **Cathodic Protection (CP) system installed on gas system? If yes, please indicate CP type.**
Does your gas system have a CP system to protect buried steel pipelines from corrosion, if so, what type of system do you have?
- ⑨ **Please indicate the length in feet of the following pipeline materials in your gas distribution system.**
Your MHP's Annual Report form to the CPUC (MHP-1) can be a source for this information.
- ⑩ **Do you have a map of the master-metered gas or electric system(s)? Please specify what map(s) you have.**
Please let us know if you have maps for the master-metered electric or gas system(s), or if you have no maps.
- ⑪ **Is any part of the property currently provided with direct gas or electric service by the local utility?**
If any part of your MHP is being served directly by the local utility (e.g. not through a master-meter), please provide details on how many spaces or locations are directly served and, if known, when service was installed.
- ⑫ **Has any portion of the gas or electric system been replaced within the last 20 years?**
Other than minor replacements related to system repairs, has any portion of the electric or gas system(s) been replaced? If so, please provide details on what system(s) was/were replaced and when the replacement(s) occurred.
- ⑬ **Has the electric or gas system been damaged by a natural disaster or fire in the last 10 years?** If so, please provide details
- ⑭ If you require additional space for any of the responses, please attach a separate sheet to this application. Please read the pledge at the bottom of the page, sign, date, and print your name and title in the appropriate locations.
- ⑮ Between January 1, 2025 – March 31, 2025, please submit the completed form to the CPUC by e-mailing the CPUC at MHPUtilityUpgradeProgram@cpuc.ca.gov or by US Mail at:

California Public Utilities Commission
Attn: SED/GSRB – MHP Utility Upgrade Program
300 Capitol Mall, Suite 400
Sacramento, CA 95814

Incomplete or grossly inaccurate forms may lead to disqualification of your application. Please keep a copy of this form, or on-line confirmation code, for your records.

For any questions, please call (800) 755-1447 or e-mail MHPUtilityUpgradeProgram@cpuc.ca.gov

CHUMASH VILLAGE HOMEOWNERS' ASSOCIATION, INC.

**3057 S. Higuera Street
San Luis Obispo, CA 93401**

**Duane Livingston, HOA President
duane@chumashvillage.com
attorneyduanelivingston@gmail.com
805-701-2662**

By Email and U.S. Mail

March 28, 2025

COVER LETTER IN SUPPORT OF REQUEST FOR CATEGORY 1 DESIGNATION

**California Public Utilities Commission
Attn: SED/GSRB – MHP Utility Upgrade Program
Attn: Jason R. McMillan
300 Capitol Mall, Suite 400
Sacramento, CA 95814**

**MHPUtilityUpgradeProgram@cpuc.ca.gov
jason.mcmillan@cpuc.ca.gov
alyssa.cheung@cpuc.ca.gov**

Re: Chumash Village MHP's (San Luis Obispo) 2025 CPUC MHP Conversion Application

Dear CPUC Personnel:

I am the president of the board of directors of the Chumash Village Homeowners' Association, Inc. (CV HOA), the legal organizational entity for Chumash Village (a senior [age 55+] resident owned mobile/manufactured home park) in San Luis Obispo, California (Chumash Village MHP).

As indicated above, this cover letter pertains to the enclosed/attached, completed *2025 CPUC Form of Intent (Application for Conversion of Master-Meter Service at Mobilehome Park or Manufactured Home Community to Direct Service from Electric or Gas Corporation)* (2025 CPUC FOI), and to emphasize Chumash Village MHP's great need and hopes to have it moved into the *Category 1* level in the subject Mobilehome Park Utility Conversion Program (CPUC MHP UCP or MHP UPC) .

Chumash Village MHP has, of course, previously applied to the CPUC MHP UCP, by its submission of a *CPUC Form of Intent* . . . in both 2015 and in 2021. Thus, in addition to the information provided on those respective forms, as well the supplemental information provided with one or both of those respective *...Form[s] of Intent...* (which are also provided here, again, as *Attachment 1* through *Attachment 4*), as the result of important information gleaned during a March 20, 2025 telephone conversation I had with Jason R. McMillan, I provide – by this cover letter -- the following additional information which may, indeed, compel the upgrading of **Chumash Village MHP**'s current *Category 2* categorization to the *Category 1* categorization.

60 Amp Meters

I have been informed that here at Chumash Village MHP we have forty-six (46) electric meters that are apparently only at 60 amp capacity; i.e., that is 46 out of the 235 resident spaces here. (As noted in the enclosed *Attachment 1* -- which was also previously submitted to CPUC in our 2021 application -- Chumash Village MHP replaced many [but not all] of its older, 60 amp meters with new digital, 100 amp meters in 2019.)

Our Current Underground Electric Delivery System Appears to have Significantly Degraded By the Unexpected 2023 Record 178%-of-Normal Rainfall – An Almost Certain New Climate Change Reality

An additional point I feel is worth noting is that in early 2023, San Luis Obispo experienced approximately 178%-of-normal rainfall. That year, the city experienced several severe flooding streets, businesses, creeks, etc.; this was a rather severe – and, arguably, somewhat catastrophic -- natural disaster. And, while Chumash Village MHP apparently had no *severe* flooding at the time, a number of residents reported that at that time -- and/or shortly thereafter -- the ongoing degradation of their electrical services significantly increased.

It is important to note, here, that Chumash Village MHP sits at the base of a range of hills called the South Hills, which like many hills, morros, and other areas in San Luis Obispo, is what is known as a geologic serpentine area, and which also comprises much volcanic solidified magma and volcanic eruption rock debris. As a result, the South Hills is, in part, very porous, and when there is rainfall the water flows relatively quickly from the hilltops, into the ground, and exits to the immediately surrounding areas, including Chumash Village MHP. (In fact, those in Chumash Village MHP whose homes are directly at the base of South Hills and which have hills or other elevated ground directly behind their home typically have drainage pipes installed to channel the rainwater buildup in those elevated areas to the street gutter below their homes.)

Therefore, one can reasonably and reliably surmise that during those unusually excessive rains of late 2022 into early 2023, substantially excessive water flowed into the under-surface soils and rock of Chumash Village MHP and that many of subject underground electric delivery lines (bare aluminum wiring not in a conduit) were significantly *further* degraded by (1) the shifts of soils and rock against the lines and/or (2) substantial and excessive water immersion of the lines.

With the reality of Climate Change upon all of us, we can only expect additional episodes of extremely heavy rains with associated flooding and excessive water flow above and below the ground surface further degrading -- if not actually incapacitating—our underground electric lines.

Prior Supporting Documents Also Included With This 2025 CPUC FOI Submission

As noted above, Chumash Village MHP previously applied to the CPUC MHP UCP, by its submission of a *CPUC Form of Intent* . . . in both 2015 and in 2021. And, with the 2021 submission, several supporting documents were included, which are again submitted with this 2025 CPUC Form of Intent Submission. Those attached documents comprise:

Attachment 1: A January 1, 2021 document entitled: *CPUC FORM OF INTENT ADDENDUM(S) 1/01/2021*. This document states certain critical, compelling information, such as (at part “A”):

- “a. Chumash Village HOA is owned by over 235 senior residents[,] [n]ot an investment firm or one individual[] corporation.”
- “b. The average age of our residents is 77 years.”
- . . .

- “d. Many of our residents are on fixed incomes or are financially dependent on assistance. (CARE & Medical Baseline Programs with PG[&]E and SoCalGas)”
- “e. Some of our residents are medically dependent on their electric service.”
- “f. Our current electric infrastructure is ‘direct bury aluminum wiring’ with an industry rated expected useful life of 25 years or less. This infrastructure is the original and was installed in 1972 (nearly 50 years ago).
- “g. In the past 6 years our community has experienced either partial or full loss of electrical power due to underground electric infrastructure failures affecting over 25 homes”
- “h. These outages have cost the homeowners (HOA) directly [more than] \$50,000 in repairs and /or emergency power generation sources during the outages.”

Attachment 2: “Project Memorandum”, dated 10/07/202, by Ashley & Vance, Engineering, Inc.
(Please see this document, directly, for certain critical, substantive information.)

Attachment 3: “MEMORANDUM Chumash Village Mobile Home Park Onsite Utility Condition Assessment”, dated December 23, 2014, by WALLACE GROUP
(Please see this document, directly, for certain critical, substantive information.)

Attachment 4: “Operators Qualification Site Information” (Not dated; probably about 2021)

Please contact me, directly, should you need any additional information.

Sincerely,



Duane Livingston
Board President
Chumash Village Homeowners’ Association, Inc.
805-701-2662
duane@chumashvillage.com
attorneyduanelivingston@gmail.com

DL;dpl

Attachments:
2025 CPUC FOI
(4) attachments: “...1”- “...4”

Attachment 1

CHUMASH VILLAGE HOMEOWNERS ASSOCIATION

3057 South Higuera St., San Luis Obispo, CA 93401

Phone (805) 543-4272 Fax (805) 543-5716

CPUC FORM OF INTENT

ADDENDUM(S)

1/01/2021

- A) Impact of Application Approval - Ownership** – Chumash Village Mobile Home Park (MHP) is fairly unique in that it is an HOA. This provides the CPUC the opportunity to directly and dramatically impact individual residents (homeowners) of this community in a positive way. With California's focus on its senior population, affordable housing, and safety for all its residents, approval of Chumash Village MHP (HOA) for the CPUC Conversion-Meter Service would impact these residents in the following ways:
- a. Chumash Village HOA is owned by over 235 senior residents. Not an investment firm or one individual/ corporation.
 - b. These individual owners all pay property taxes directly.
 - c. The average age of our residents is 77 years.
 - d. Many of our residents are on fixed incomes or financially dependent on assistance. (CARE & Medical Baseline Programs with PGE and SoCalGas)
 - e. Some of our residents are medically dependent on their electric service.
 - f. Our current electric infrastructure is "direct bury aluminum wiring" with an industry rated expected useful life of 25 years or less. This infrastructure is the original and was installed in 1972 (nearly 50 years ago).
 - g. In the past 6 years our community has experienced either partial or full loss of electrical power due to underground electric infrastructure failures affecting over 25 homes.
 - h. These power outages have cost the owners (HOA) directly over \$50,000 in repairs and /or emergency power generation sources during the outages.
 - i. Current gas lines run directly under each of the coaches (units) which is a danger to life and property.
 - j. Based on Engineering reports and construction estimates paid for by the HOA in 2014 and again in 2019, the potential direct financial burden to the residents of Chumash Village for the replacement of both the gas and electrical infrastructure could be over \$25,000 per unit. This is a financial impossibility for most of our residents.
- B) Urgent Priority and Work done to-date** – Chumash Village MHP (HOA) has set its fragile infrastructure and the safety of its residents as one of the highest priorities. That along with a focus on the financial health of the community, has driven Chumash Village HOA to establish an Infrastructure Committee and to contract with two engineering firms to provide two detailed engineering reports on the needs and costs for a complete replacement of our underground infrastructure. Those Engineering reports are attached for reference (under "C" below) to demonstrate Chumash Village's:
- a. Importance placed on this critical project – failing infrastructure,
 - b. Willingness and desire to proceed with the CPUC on this project,
 - c. Chumash replaced over 90% of its electric meters with new digital meters in 2019, and over 75% of the gas meters have been replaced with new meters. All other meters were recertified in 2019.
 - d. Teams that have already been established and are prepared to work with the CPUC, PG&E and SoCalGas to see this project through to a successful completion,
 - e. The established Infrastructure Committee has actively participated as a "Party to the Proceedings" in many of the CPUC Pilot Program meetings and has offered to be a model MHP/ Partner to demonstrate how the CPUC, Utility Provider, and MHP can and should work effectively together on these projects,
 - f. Homeowner awareness of the need and willingness to proceed.
- C) Engineering Reports, Maps, Designs and Cost Estimates** – Chumash Village HOA contracted with two engineering firms to provide two detailed engineering reports on the needs and costs for a complete replacement of our underground infrastructure. Those reports and associated information are attached here for reference. Also attached is the latest Site Information document provided by our contractor (Jarsco) who performs our annual site inspection on our GAS infrastructure.

Attachment 2

Project Memorandum

Project Name: **Chumash Village Utility Review** Date: **10/7/2020**

Subject: **Preliminary Wet and Dry Utility
Layouts and Associated Cost
Estimates** AV Job Number: **15800**

To whom it may concern:

The following documents were prepared at the direction of Chumash Village Staff in an effort to further the evaluation of existing facility conditions, well documented in the Wallace report prepared December 23, 2014, and prepare plans and opinions of probable costs related to the replacement of existing water, sewer and electrical facilities into areas that are more functional on a long term/maintenance basis.

Enclosed are the following documents:

- Water and Sewer Opinion of Probable Costs (A&V)
- Electrical Opinion of Probable Costs (Thoma)
- Water and Sewer Preliminary Utility Master Plan (A&V)
- Electrical Site Utilities Master Plan (Thoma)

These documents are preliminary and not for construction. Cost estimates may vary from actual costs based on current construction costs, potential phasing efforts and other unforeseen conditions.

Respectfully,



Ken Brown, PE 78390
Principal Engineer
Ashley & Vance Engineering, Inc.



ENGINEER'S ESTIMATE OF PROBABLE COST

CHUMASH VILLAGE MOBILE HOME PARK
COMPREHENSIVE WATER AND SEWER REPLACEMENT PROJECT

PREPARED BY: KBB
DATE: 9/14/2015

ITEM	DESCRIPTION	QUANTITY	UNIT	COST/UNIT	TOTAL
	GENERAL CONSTRUCTION				
1	MOBILIZATION	1	LS	\$ 8,000	\$ 8,000
2	WATER POLLUTION CONTROL PROGRAM (SWPPP)	1	LS	\$ 3,500	\$ 3,500
3	EROSION CONTROL IMPLEMENTATION	1	LS	\$ 10,000	\$ 10,000
	WATER DISTRIBUTION SYSTEM				
4	2" SCHEDULE 40 PVC	7940	LF	\$ 12	\$ 95,280
5	6" C900 DR18 PVC	4860	LF	\$ 30	\$ 145,800
6	SERVICE CONNECTION W/ NEW METER	239	EA	\$ 650	\$ 155,350
7	ARV/BO VALVES	2	EA	\$ 2,000	\$ 4,000
8	FIRE HYDRANT	6	EA	\$ 3,500	\$ 21,000
9	6" GATE VALVES	82	EA	\$ 900	\$ 73,800
	SEWER COLLECTION SYSTEM				
10	6" SDR35 PVC MAIN	4390	LF	\$ 45	\$ 197,550
11	8" SDR35 PVC MAIN	3350	LF	\$ 65	\$ 217,750
12	4" SDR35 PVC LATERAL CONNECTIONS	239	EA	\$ 150	\$ 35,850
13	MANHOLE	26	EA	\$ 4,500	\$ 117,000
14	CLEANOUT (NOT AT EACH CONNECTION)	11	EA	\$ 650	\$ 7,150
15	SERVICE CONNECTION	239	EA	\$ 300	\$ 71,700

CONSTRUCTION SUBTOTAL \$ 1,163,730
ENGINEERING/TESTING/STAKING @ 25% \$ 290,933
CONTINGENCY @25% \$ 363,666
TOTAL ESTIMATED PROJECT COST \$ 1,818,328



January 10, 2019



Ashley & Vance Engineering
1413 Monterey St.
San Luis Obispo, CA 93401

Attn: Ken Brown

RE: Chumash Village
Utility Upgrades

Ken: As a follow up to our meeting at Thoma Electric with Owner Representatives, I offer the following:

Project Overview:

Original base scope of work was to plan new electrical distribution throughout the park following your new distribution plan for new underground wet utilities. As requested by the Owner, we created an add service task to focus on a plan that could be built in phases and address issues that were created by electrical cable failures at the south end of the park.

Deliverables:

This report will make recommendations and include budgets of probable construction costs for:

- A. Existing main switchboard (test/service and/or replace).
- B. Infrastructure plan (i.e., conduits, boxes, transformer pads, etc.) for first phase to serve south end of park.
- C. Distribution plan (i.e., breakers, conductors, transformer, etc.) for first phase and feeder plan (i.e., feeders, feeder taps, meter pedestal, etc.) required to reconnect units temporarily connected to 120 volt.
- D. Typical feed to a residential unit from the drive entry to new meter pedestal.

A. MAIN SWITCHBOARD

The existing main switchboard is rated 1600 amps at 480 volt, three phase, three wire. It appears to be original equipment per the original drawings (dated 1971) and is at the end of its useful life. There are several options to consider here:

- 1. Have the switchboard inspected/tested by a certified testing agency. This would involve some utility downtime while the equipment is opened so the work could be performed. The idea here is to give the Owners a comfort level that the existing breakers have been tested

**3562 Empleo, Ste.C – P.O. Box 1167
San Luis Obispo, California 93406
(805)543-3850 FAX (805)543-3829
E-mail - bthoma@thomaelec.com**

and should operate properly in the future if needed. However, this option does not guarantee any extended life of the equipment and in the end you still have a very old switchboard.

We would expect the cost for this option to be in the range of \$7,000.00 to \$9,000.00.

2. Replace the existing switchboard with new. This option involves more extensive utility downtime as the old equipment is removed and the new switchboard installed. This option will be the most expensive but leaves the project with a brand new metered switchboard with distribution.

We would expect the cost for this option to be in the range of \$75,000.00 to \$80,000.00.

3. Add new distribution section to the side of the existing switchboard for breakers/feeds to new transformers, while the existing transformers stay connected to the existing distribution breakers. This option leaves the project with a new distribution section and breakers. It can be installed without involving PG&E because the work could be done by shutting off the main circuit breaker. The existing switchboard/distribution breakers could be left in place and continue to feed the existing transformers currently serving the park. As new transformers are installed and connected to the new distribution section/breakers, the old breakers can be disconnected and retired in place.

We would expect the cost for this option to be in the range of \$25,000.00 to \$30,000.00.

Of the (3) options described above, our recommendation would be to have a testing company test/certify the main breaker, generally clean/inspect the switchboard structure, and add the distribution section with new breakers as described in Option 3 above.

B. INFRASTRUCTURE

New boxes, conduits, transformer pads, trenching/site work, etc. associated with implementing electrical distribution plan.

Although a plan has been sketched with proposed infrastructure throughout the park, the focus for budget pricing is the infrastructure that would serve Lots 45 through 73 inclusive and 112 through 117 inclusive.

We would expect the cost for this first phase of infrastructure to be in the range of \$330,000.00 to \$350,000.00.

C. DISTRIBUTION PLAN

New 480 volt feed to (1) transformer and 120/240 volt feeders to Lots 112 through 117.

Although a plan has been sketched with proposed transformer locations and distribution to residential lots throughout the park, the focus for budget pricing is the feeder associated with transformer "T1" and distribution to Lots 112 through 117.

We would expect the cost for this first phase of distribution to be in the range of \$100,000.00 to \$115,000.00.

D. TYPICAL FEED TO RESIDENTIAL UNITS

The infrastructure/distribution plan leaves a conduit stubbed, capped and marked at the driveway of each residential lot for future use as needed. This line item is a budget to extend conduit/conductors from the stub at the driveway, set a new 100 amp meter pedestal and reconnect the home.

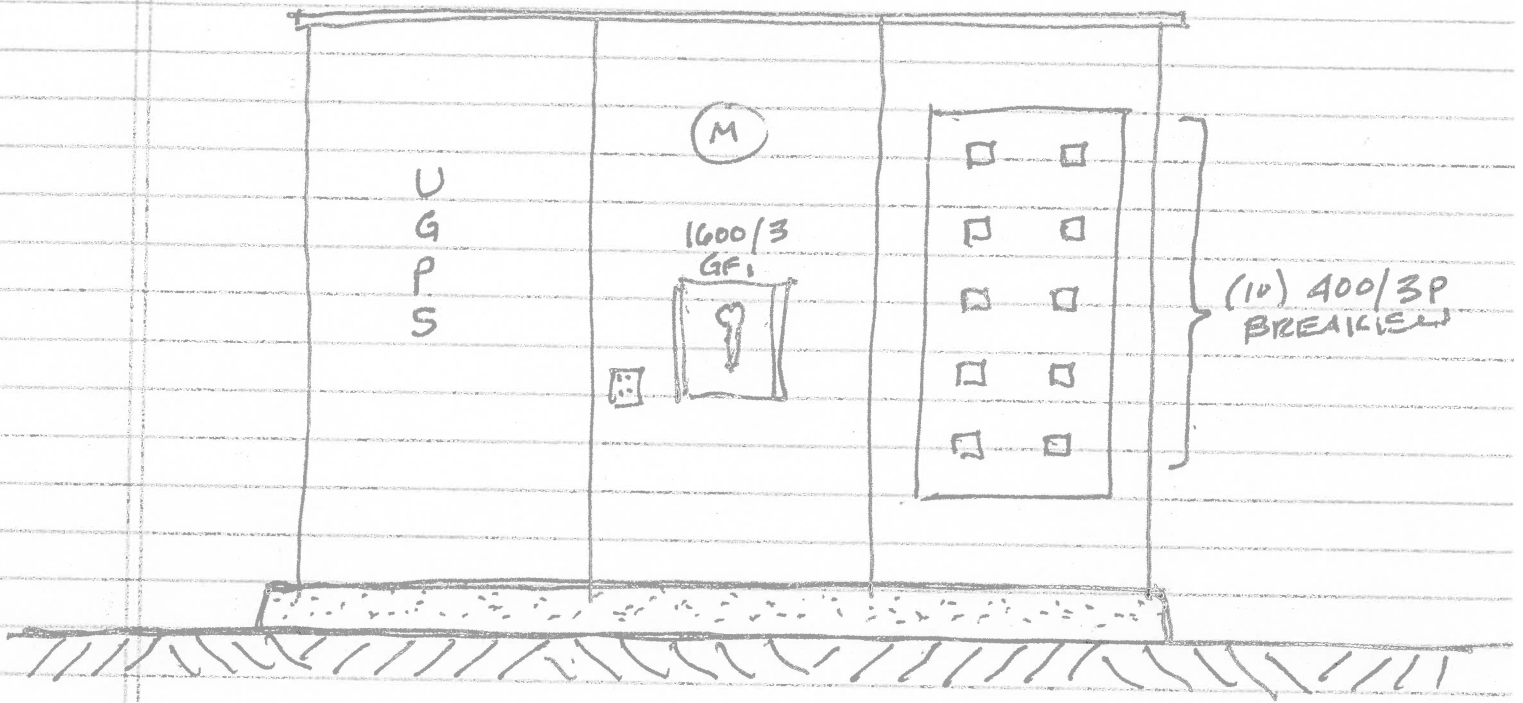
We would expect the cost for a new feeder/meter pedestal at each residential lot to be in the range of \$10,000.00 to \$15,000.00.

Sincerely,

James J. Dean
Engineering Division Supervisor
Thoma Electric, Inc.
K:\ENG\2017\17-8039\CORRESP\17-8039_follow up.doc

Attached: Equipment Options

480 V. 3 ϕ , 3W
NEMA 3R

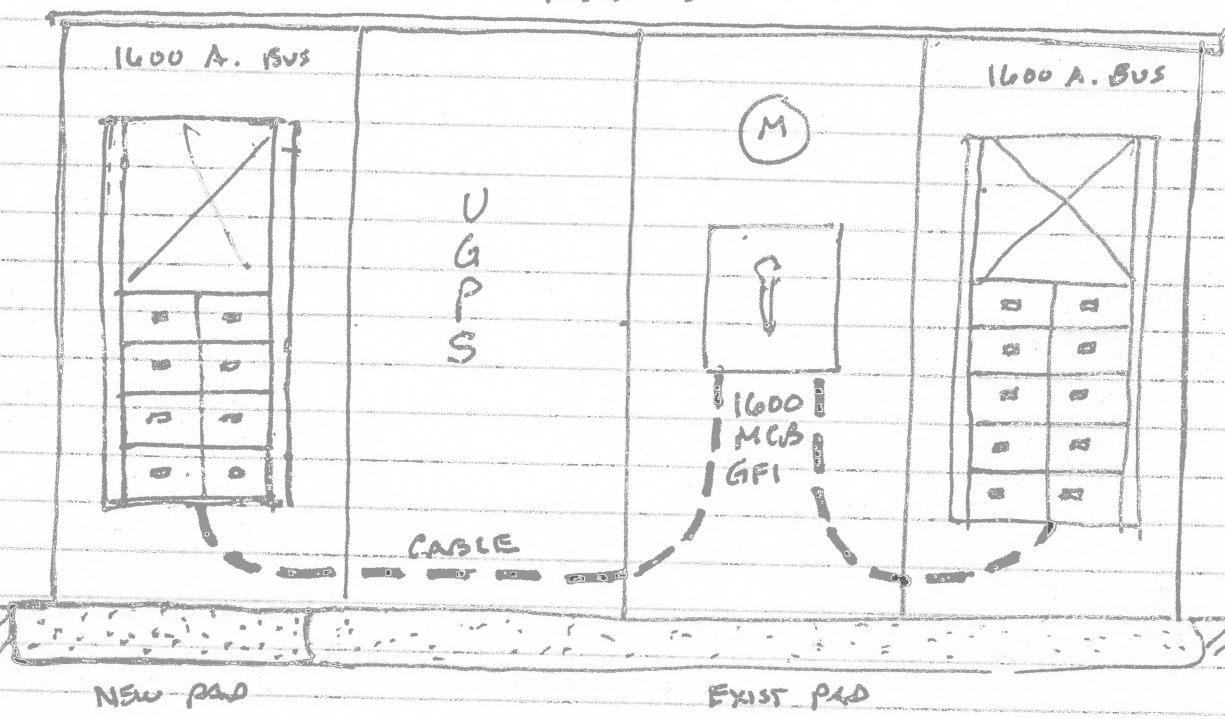


EXIST. CONDITIONS

CHUMASH VILLAGE

1-10-19

NEW FEEDERS 277/480 V.
3Φ, 4W.
NEMA 3R EXIST FEEDERS

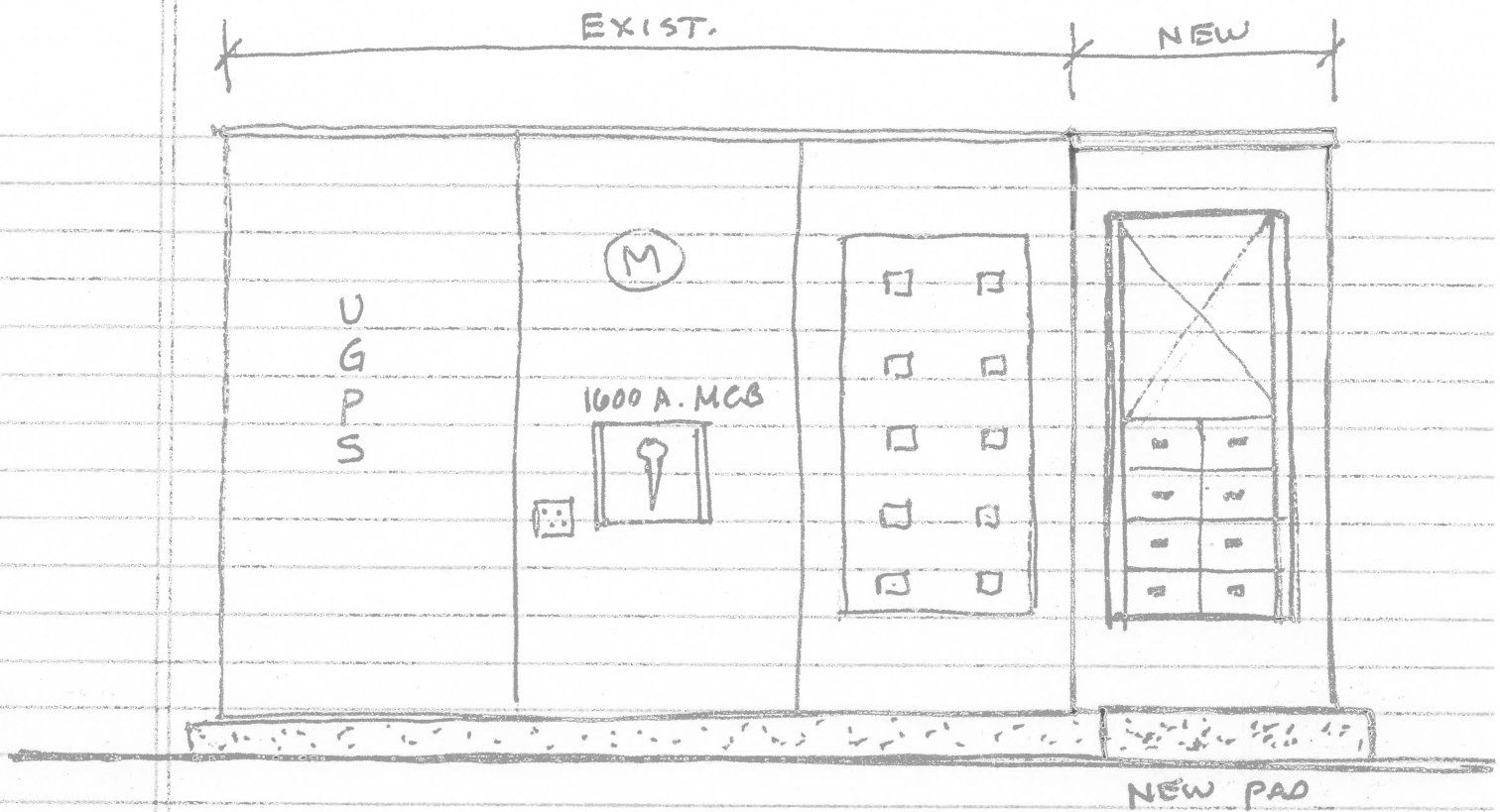


PROPOSED NEW SWBRD.

EXTENDED PG & E DOWNTIME

CHUMASH VILLAGE

1-10-19



NEW DISTRIB. SECTION

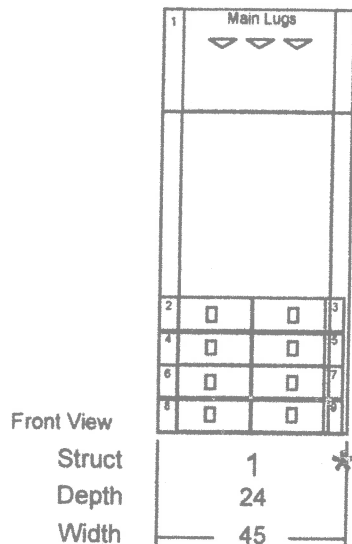
NO PG&E DOWNTIME

(INSPECTION OF SWITCHBOARD AND TESTING
OF MAIN BREAKER STILL RECOMMENDED)

CHUMASH VILL.

1-10-19

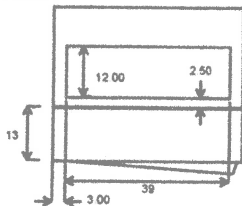
NEW DISTRIBUTION SECTION



Power Flow



Floor Plan
Rear



Total of 1 Structures, Total Weight of 750 Weight-Lbs. with Front Hinged Doors.
Total of 1 Structures, Total Width of 45 Inches with Front Hinged Doors.

Structure	1					
Ship-Inches	45.00					
Ship-MM	1143					
Wdth-Inches	45.00					
Wdth-MM	1143					
Depth(Inner)-In.	24.00					
Depth(Inner)-MM	609					
Depth(Outer)-In.	37.00					
Depth(Outer)-MM	939					
Height-Inches	90.00					
Height-MM	2286					
Weight-Lbs.(Est.)	750					
Weight-Kg.(Est.)	340					

The information on this document is created by Eaton Corporation. It is disclosed in confidence and it is only to be used for the purpose in which it is supplied.

PREPARED BY

DATE

JAN APPEL

12/26/2018

Eaton

SumterSC

APPROVED BY

DATE

JOB NAME

CHUMASH DISTRIBUTION BOARD

DESIGNATION

DP

VERSION

9.0.14.0

TYPE

Switchboards

DRAWING TYPE

CustAppr

NEG-ALT Number

F5611226X8K1-0000

REVISION

0

DWG SIZE

DwgA

G.O.

ITEM

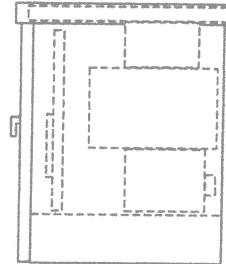
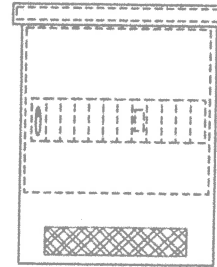
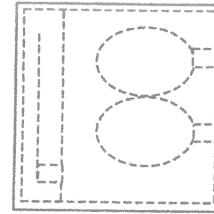
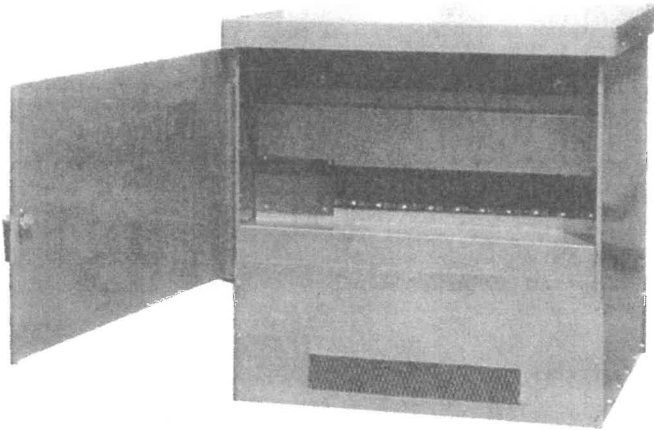
SHEET

2 of 3

Dry Type Transformers

With distribution for RV & mobile home park applications

25
DRY TYPE
TRANSFORMERS



Distribution Transformers

Catalog Number	KVA	Volts to 120/240 1Ø	UL Listed	Weight (lbs.)	Dimensions		
					D"	W"	H"
7URMD	75	480	Yes	850	40	38	48
10URMD	100	480	Yes	1050	40	38	48
16URMD	167½	480	Yes	1400	40	38	48
20URMD	200	480	Yes	1650	40	38	48
25URMD	250	480	No	2200	40	38	48
7URMD24	75	2400	No	1050	53	41	48
10URMD24	100	2400	No	1200	53	41	48
16URMD24	167½	2400	No	1650	53	41	48
20URMD24	200	2400	No	1900	53	41	48
25URMD24	250	2400	No	2200	53	41	48

Notes

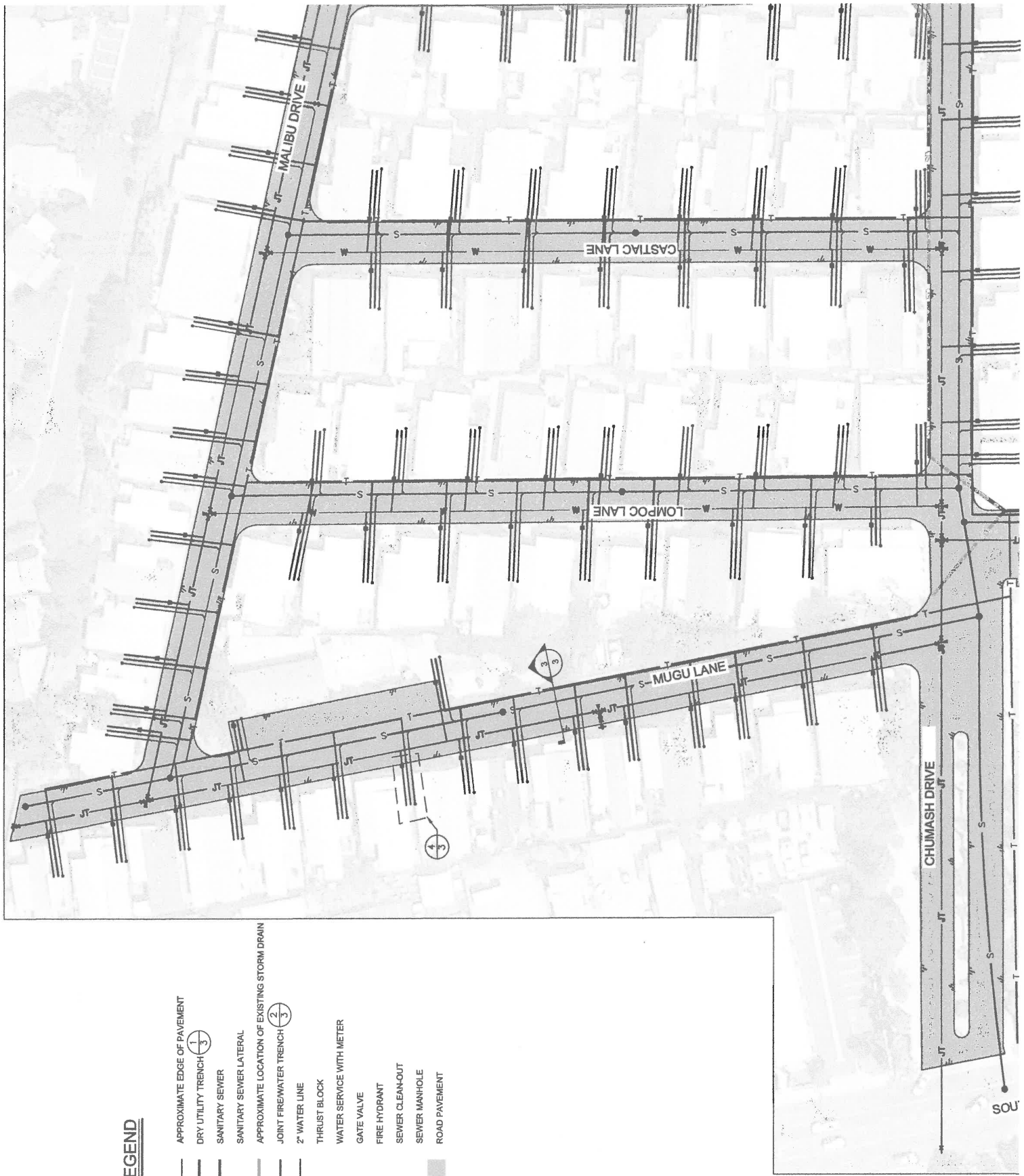
- **Replacement Bus Kit:** For a replacement bus kit, order **K5425**.

Utility requirements for this equipment may vary. Always consult the serving utility for their requirements prior to ordering or installing this equipment. This product must be installed by a licensed electrician. Installation of this equipment may require local electrical inspector approval.



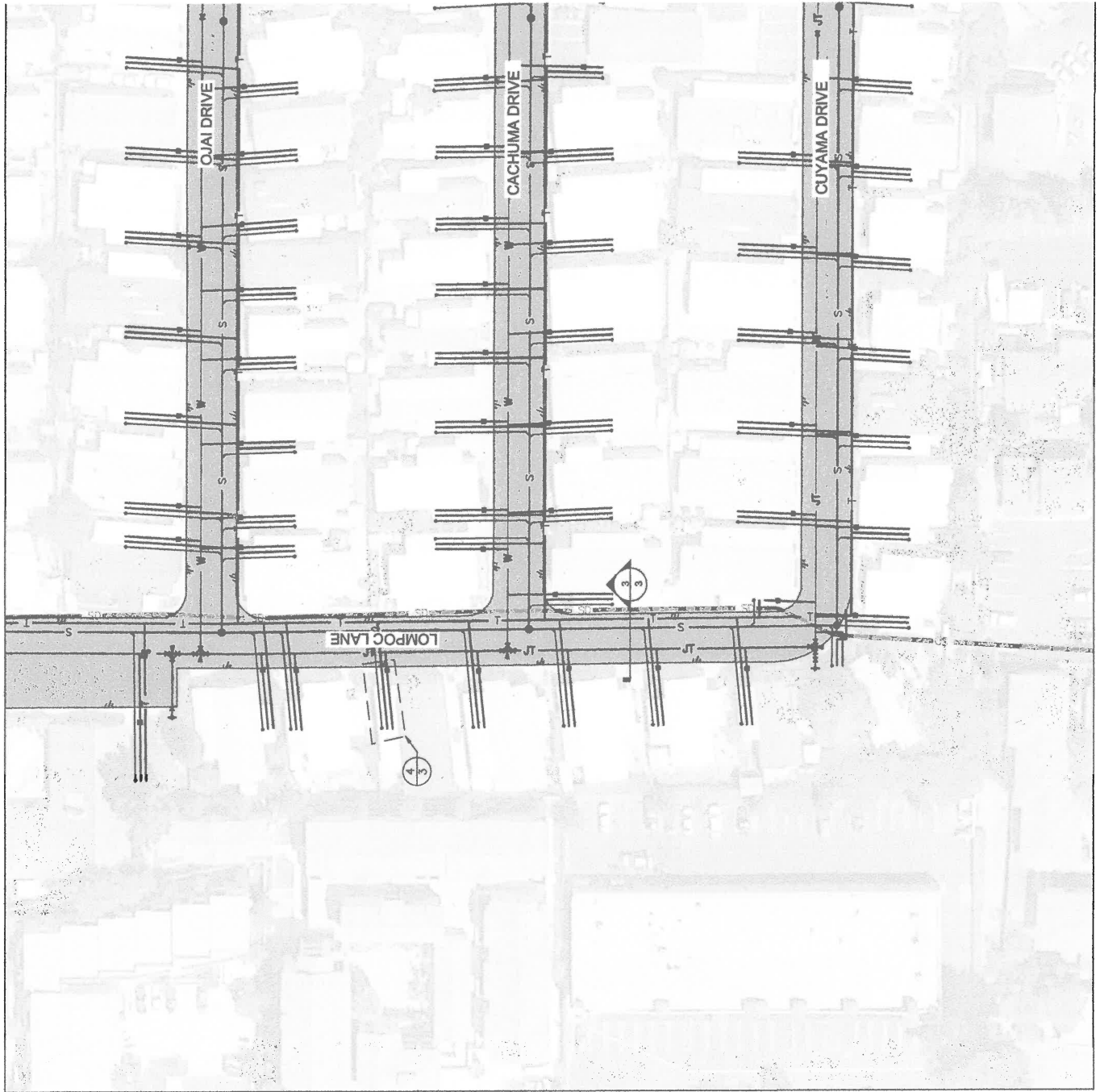
LEGEND

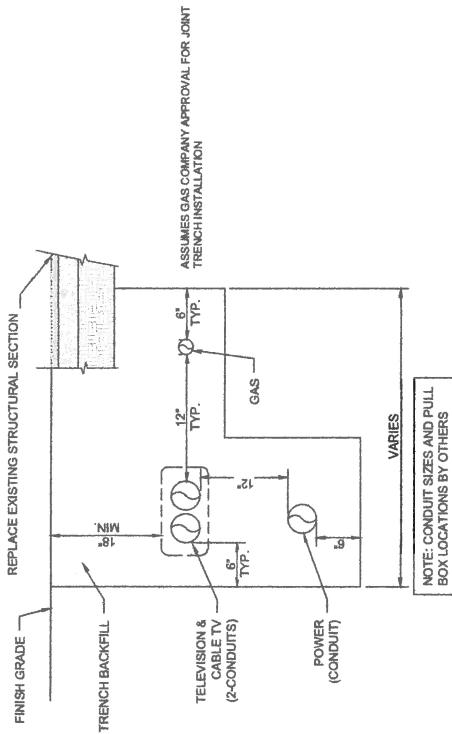
	APPROXIMATE EDGE OF PAVEMENT
	DRY UTILITY TRENCH
	SANITARY SEWER
	SANITARY SEWER LATERAL
	APPROXIMATE LOCATION OF EXISTING STORM DRAIN
	JOINT FIRE/WATER TRENCH
	2' WATER LINE
	THRUST BLOCK
	WATER SERVICE WITH METER
	GATE VALVE
	FIRE HYDRANT
	SEWER CLEAN-OUT
	SEWER MANHOLE
	ROAD PAVEMENT



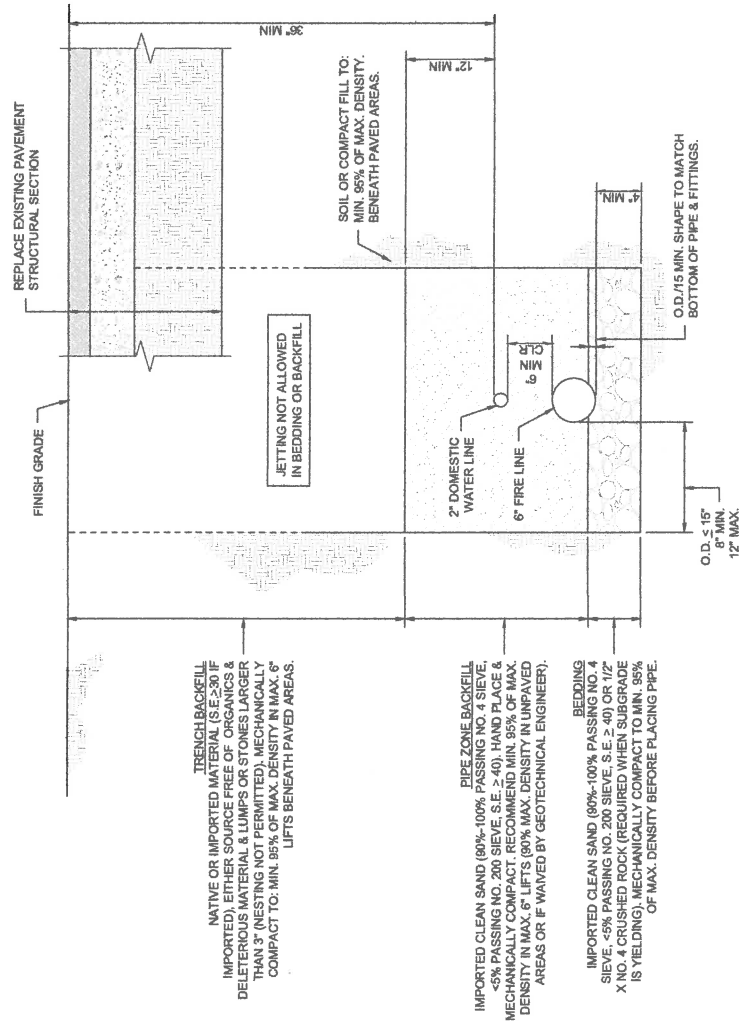
LEGEND

	APPROXIMATE EDGE OF PAVEMENT
	DRY UTILITY TRENCH
	SANITARY SEWER
	SANITARY SEWER LATERAL
	APPROXIMATE LOCATION OF EXISTING STORM DRAIN
	JOINT FIRE/WATER TRENCH
	2' WATER LINE
	THRUST BLOCK
	WATER SERVICE WITH METER
	GATE VALVE
	FIRE HYDRANT
	SEWER CLEAN-OUT
	SEWER MANHOLE
	ROAD PAVEMENT

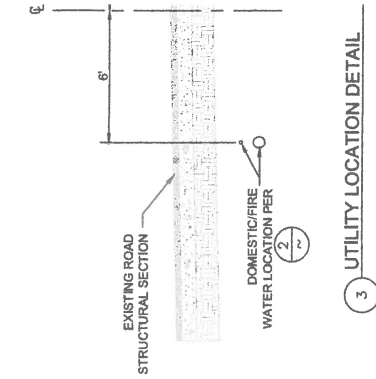




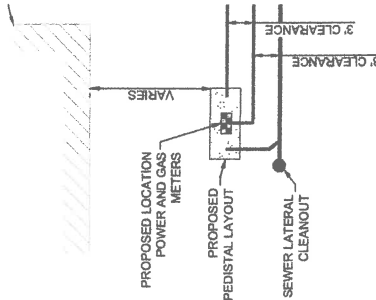
1 DRY UTILITY TRENCH DETAIL



DEWATER AND/OR STABILIZE YIELDING SUBGRADE
AS REQUIRED BY GEOTECHNICAL ENGINEER.



3 UTILITY LOCATION DETAIL



4 LATERAL CONNECTION DETAIL

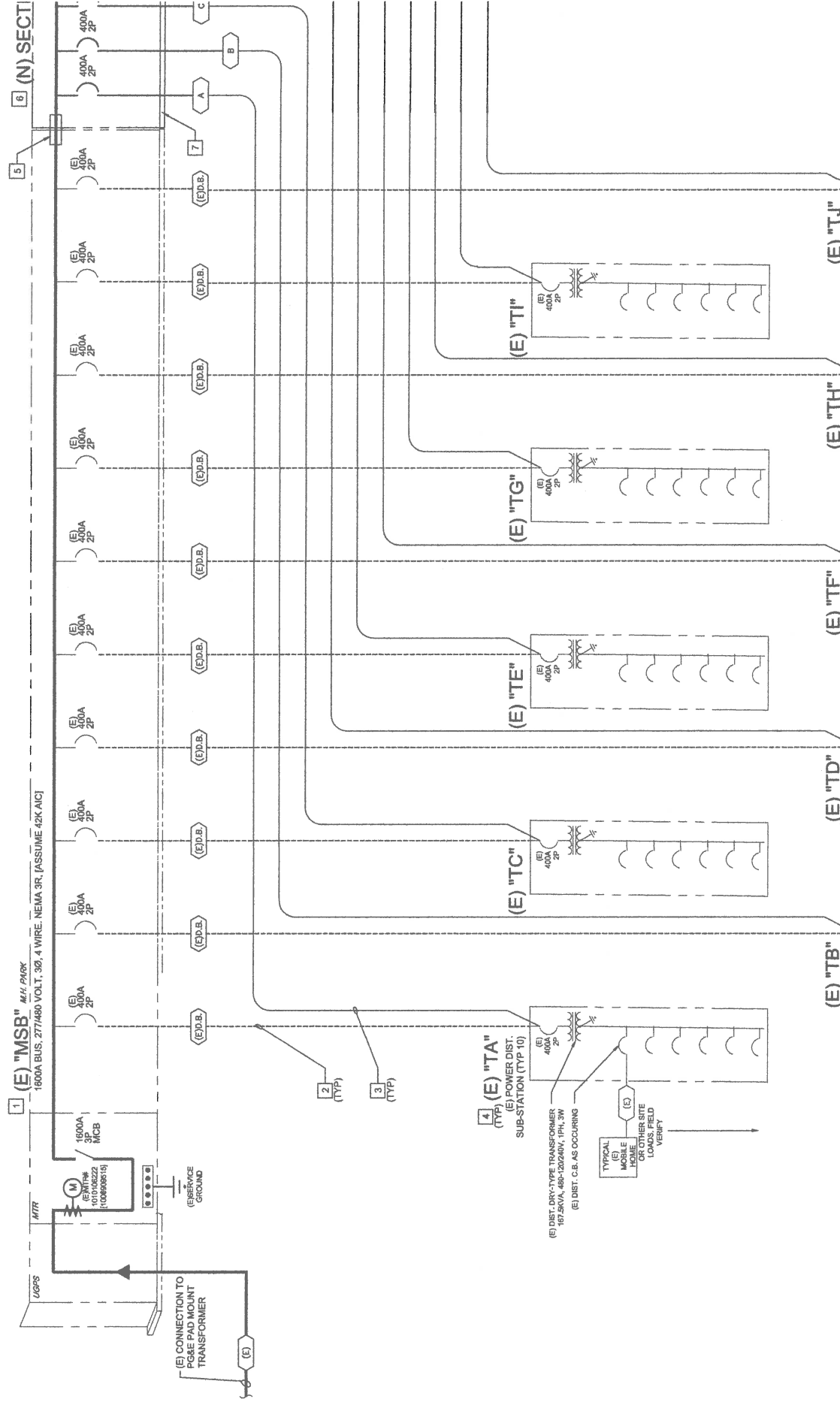
REFERENCE NOTES

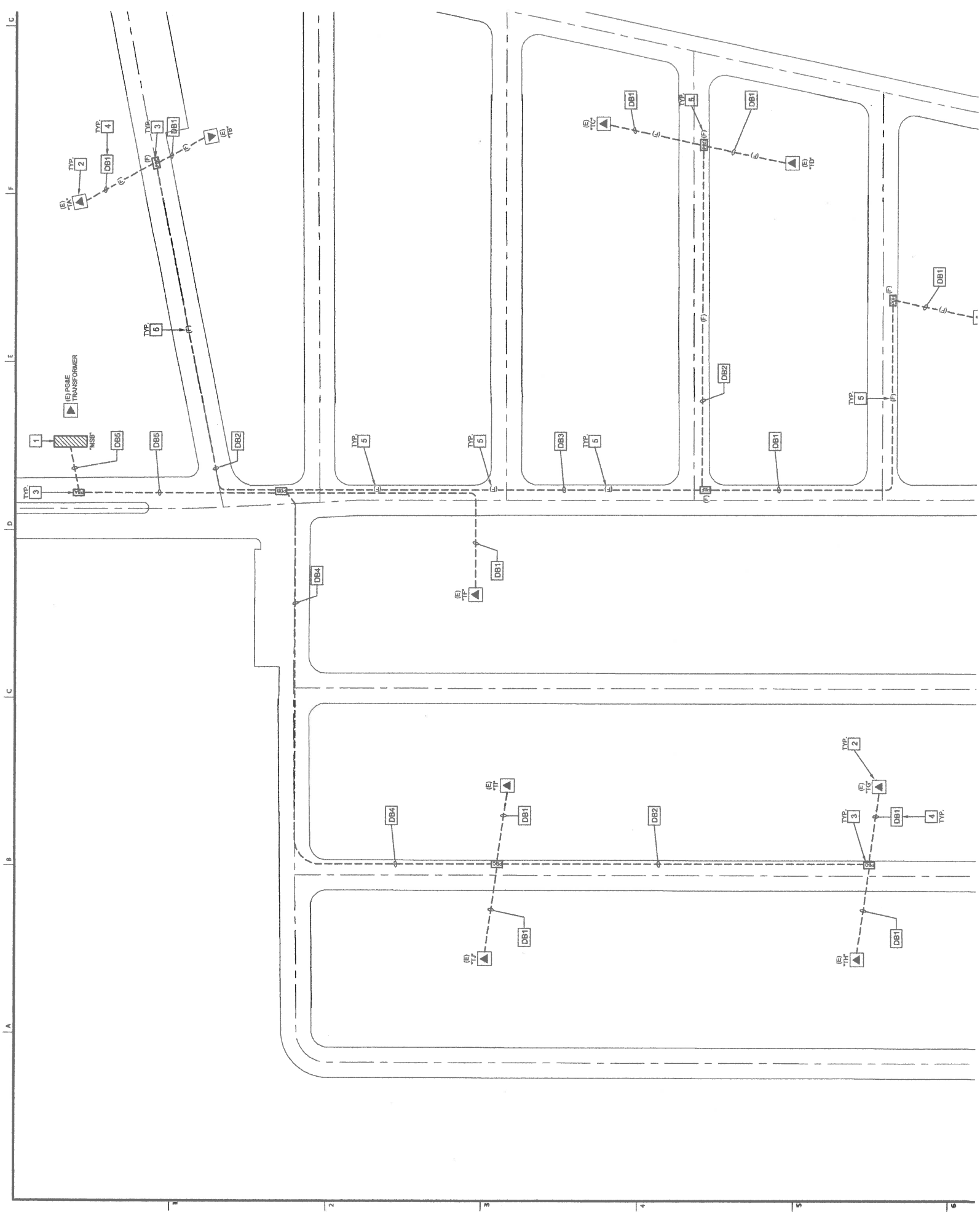
- EXISTING METERED SWITCHBOARD TO REMAIN. SEE "MSB" PHOTO ON SHEET E-5.2.
- EXISTING DIRECT BURY FEEDER TO BE DISCONNECTED, TAPPED OFF, AND ABANDONED IN-PLACE.
- NEW FEEDER IN CONDUIT PER SITE PLAN ON SHEET E-2 AND WIRING MATRICES ON SHEET E-3. CROSS REFERENCE TO WIRING MATRIX PER UNIT SUBSTATION TRANSFORMER DESIGNATION. PULL BOXES NOT SHOWN ON S.L.D.
- EXISTING UNIT SUBSTATION WITH CIRCUIT BREAKERS SERVING SITE LOADS TO REMAIN. SEE PHOTOS ON SHEETS E-5.0, E-5.1 & E-5.2. DISCONNECT EXISTING INCOMING 480V POWER FEEDER AND RECONNECT UNIT TO THE NEW 480V POWER FEEDER. COORDINATE DOWN-TIME WITH OWNER.
- PROVIDE BUS LINK PER SWITCHGEAR MANUFACTURER.
- PROVIDE NEW 1600A, 480V, 3PH, 4W SWITCHBOARD SECTION.
- EXTEND CONCRETE HOUSEKEEPING PAD AS REQUIRED.

LEGEND

- POWER/COMM.
- CONDUIT
 - ELECTRICAL PANEL
- CONDUIT/WIRE
- NEW
 - UNDERGROUND
 - FUTURE UNDERGROUND
 - INDICATES LINE CONTINUES

- CONVENTIONS
- NUMBERED SHEET IN ON SAME SHEET AS F
 - DETAIL REFERENCE: -DETAIL DESIGNATION -SHEET NUMBER R





WIRING MATRIX

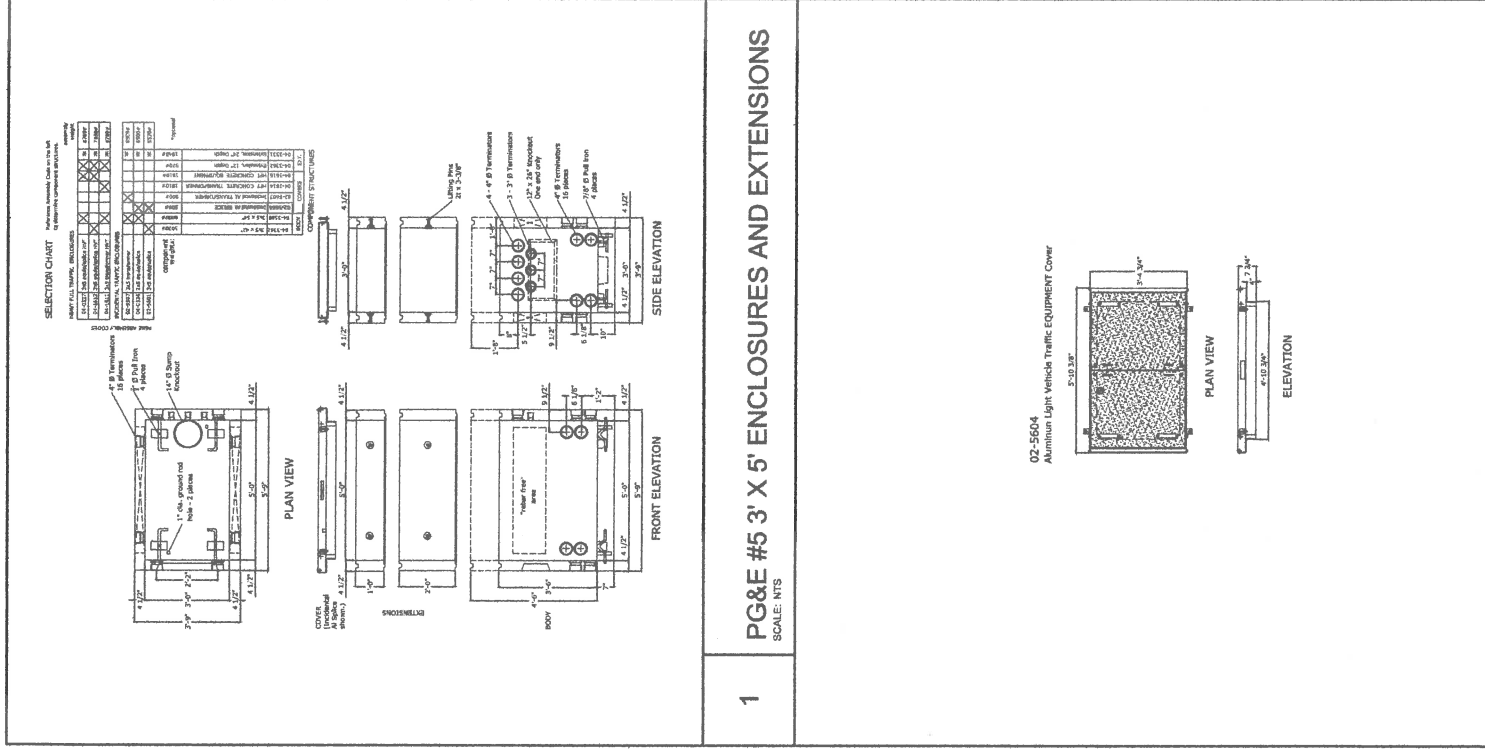
Sl. No.	Wormer	Distance	Capacity	Volts	Amps	3% VD	Wire Size	Wire type	Actual VD	Parallel	C Size
1	A	650	167 Kva	480 1 ph	348	456.5	250	Xhw AL	2.66	6 + 1 G	4"
2	B	650	167 Kva	480 1 ph	348	456.5	250	Xhw AL	2.66	6 + 1 G	4"
3	C	1000	167 Kva	480 1 ph	348	456.5	350	Xhw AL	2.92	6 + 1 G	4"
4	D	1000	167 Kva	480 1 ph	348	456.5	350	Xhw AL	2.92	6 + 1 G	4"
5	E	1050	167 Kva	480 1 ph	348	456.5	350	Xhw AL	3.07	6 + 1 G	4"
6	F	525	167 Kva	480 1 ph	348	456.5	250	Xhw AL	2.15	6 + 1 G	4"
7	G	1250	167 Kva	480 1 ph	348	456.5	350	Xhw AL	2.74	8 + 1 G	4"
8	H	1250	167 Kva	480 1 ph	348	456.5	350	Xhw AL	2.74	8 + 1 G	4"
9	I	900	167 Kva	480 1 ph	348	456.5	350	Xhw AL	2.63	6 + 1 G	4"
10	J	900	167 Kva	480 1 ph	348	456.5	350	Xhw AL	2.63	6 + 1 G	4"

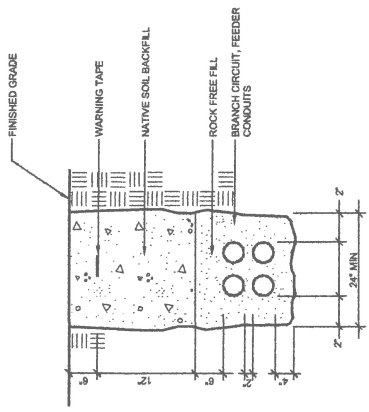
DUCT BANK SCHEDULE

DESIGNATION	CONDUITS QUANTITY/SIZE	COMMENTS
DB1	(1) 4" PVC 40	SEE TRENCH DETAIL 
DB2	(2) 4" PVC 40	SEE TRENCH DETAIL 
DB3	(3) 4" PVC 40	SEE TRENCH DETAIL 
DB4	(4) 4" PVC 40	SEE TRENCH DETAIL 
DB5	(10) 4" PVC 40	SEE TRENCH DETAIL 

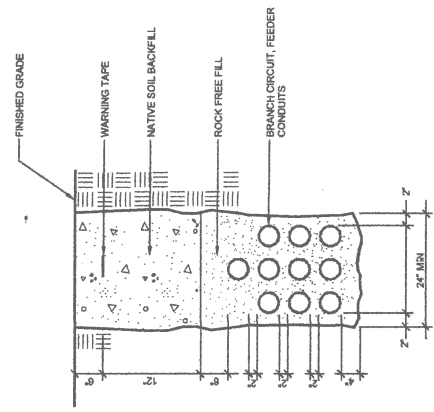
PULL BOX SCHEDULE

DESIGNATION	SIZE	RATING	LABEL
PBA	3' x 5'	FULL TRAFFIC	ELECTRIC
PBB	3' x 5'	FULL TRAFFIC	ELECTRIC
PBC	3' x 5'	FULL TRAFFIC	ELECTRIC
PBD	3' x 5'	FULL TRAFFIC	ELECTRIC
PBE	3' x 5'	FULL TRAFFIC	ELECTRIC
PBF	3' x 5'	FULL TRAFFIC	ELECTRIC
PBG	3' x 5'	FULL TRAFFIC	ELECTRIC





4

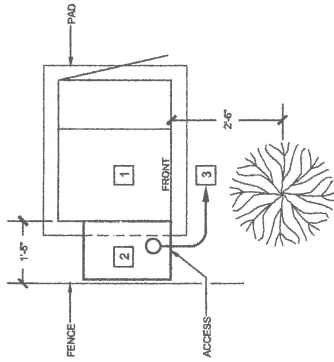


5



TRANSFORMER TA

SCALE: 1/2" = 1'-0"



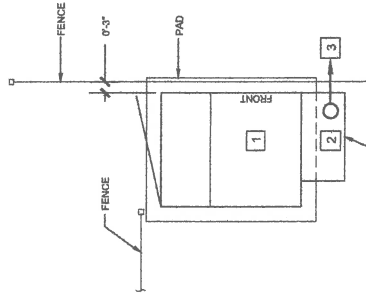
REFERENCE NOTES

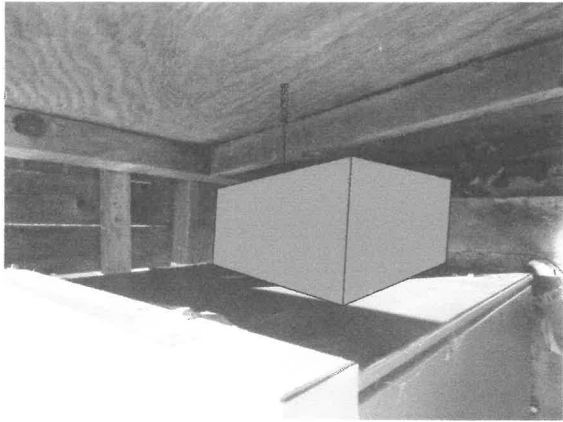
1. EXISTING 167 KVA TRANSFORMER WITH BREAKER PANEL FOR UNITS.
2. NEW 16" W x 24" H x 24" D NEMA 3R JUNCTION BOX.
3. NEW (1) 1" C WITH (6) 250 MCM XHHW AL - (1) 40 XHHW AL GROUND TO NEW UNDERGROUND VAULT.



TRANSFORMER TB

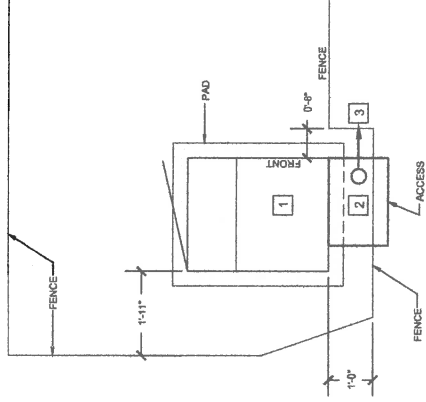
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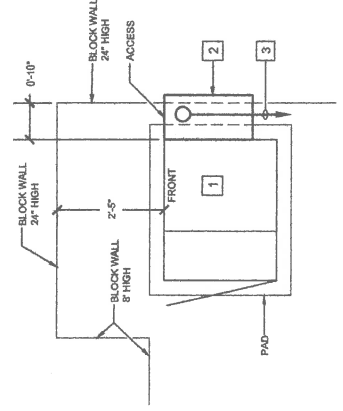
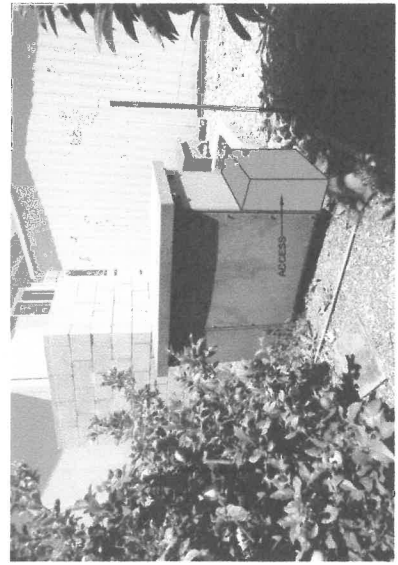
TRANSFORMER TE

SCALE: 1/2" = 1'-0"



REFERENCE NOTES

1. EXISTING 167 KVA TRANSFORMER WITH BREAKER PANEL FOR UNITS.
2. NEW 24" W x 24" H x 16" D NEMA 3R JUNCTION BOX.
3. NEW (1) 4" C WITH (6) 350 MCM XHHW AL + (1) 40 XHHW AL GROUND TO NEW UNDERGROUND VAULT.



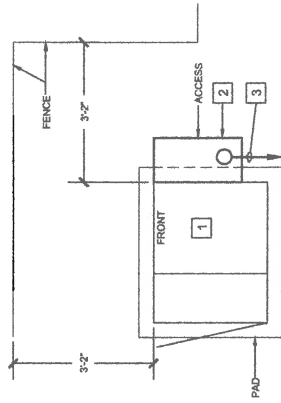
TRANSFORMER TF

SCALE: 1/2" = 1'-0"



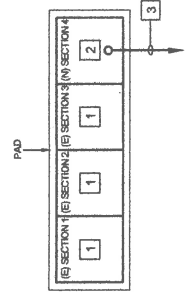
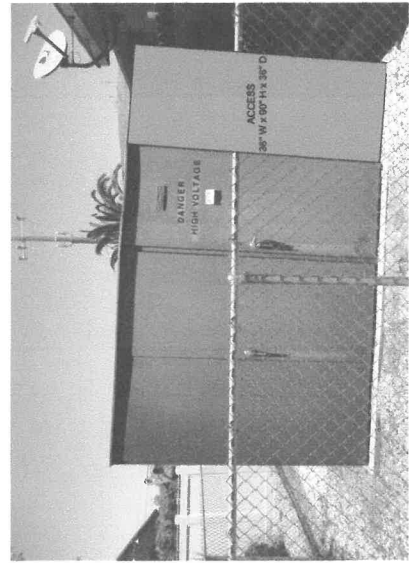


TRANSFORMER TI
SCALE: 1/2" = 1'-0"

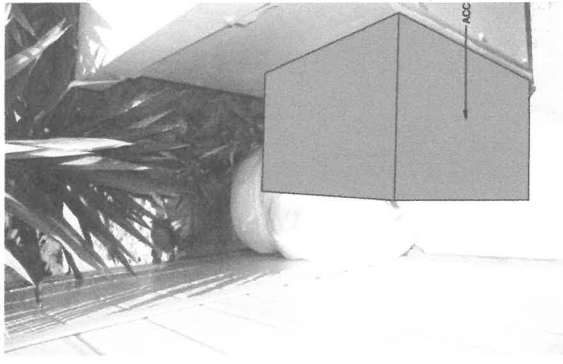


REFERENCE NOTES

1. EXISTING 167 KVA TRANSFORMER WITH BREAKER PANEL FOR UNITS.
2. NEW 24" W x 24" H x 12" D NEMA 3R JUNCTION BOX.
3. NEW (1) 4" C WITH (6) 350 MCM XHHW AL + (1) 4/0 XHHW AL GROUND TO NEW UNDERGROUND VAULT.

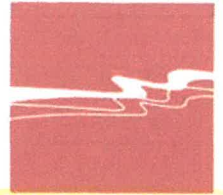


TRANSFORMER TJ
SCALE: 1/2" = 1'-0"



MEMORANDUM

Chumash Village Mobile Home Park Onsite Utility Condition Assessment



WALLACE GROUP®

Date: December 23, 2014

To: Chumash Village Mobile Home Park,
Attention: Caleb Lim, General Manager

From: Kari Wagner, P.E. *KW*

Via: Aaron Yonker, P.E. and Darrell Goo

Subject: Phase 1: Existing Utilities Research & Utility Recommendations



CIVIL AND
TRANSPORTATION
ENGINEERING

CONSTRUCTION
MANAGEMENT

LANDSCAPE
ARCHITECTURE

MECHANICAL
ENGINEERING

PLANNING

PUBLIC WORKS
ADMINISTRATION

SURVEYING /
GIS SOLUTIONS

WATER RESOURCES

Wallace Group was retained by the Chumash Village Mobile Home Park (Chumash Village MHP) on October 13, 2014 to perform an assessment of the existing condition of the utility services, including water, sanitary sewer, storm water, natural gas, electrical, telephone and CATV. As part of this assessment, Wallace Group has provided recommendations for improvements or upgrades to the existing utilities as well as preliminary cost estimates. This memorandum provides the results of our assessment.

CHUMASH VILLAGE MOBILE HOME PARK BACKGROUND

Chumash Village Mobile Home Park is a residential community located within the City of San Luis Obispo at 3057 South Higuera Street. The Park is a resident-owned community, operating as a Condominium Association with 236 mobile home lots and coaches, two laundry facilities, one community swimming pool, and one recreational facility/office. Individual lots are owned by trust deed by the residents with a Home Owner's Association (HOA) responsible for maintenance of the areas owned in common.

The Park was constructed in the early 1970's. Utilities installed at that time and remaining in use today consist of water, sewer, natural gas, electric, cable, and telephone. The utilities are each contained within a common trench. These common trenches extend services to each coach through alignments located directly below each coach. Each coach is equipped with a utility pad where service connections are made. A typical example of the utility pads (i.e. service connections) is shown in the picture.



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CALIFORNIA 93401

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The water distribution system and the sewer collection systems are each privately owned and operated by Chumash Village MHP HOA. In turn, the park is responsible for the maintenance, rehabilitation, and replacement of these two systems.

Stormwater generated within the park discharges into a stormwater collection system that is owned and operated by the City of San Luis Obispo. The stormwater collection system collects stormwater runoff through inlet structures located within Chumash Village MHP streets, as well as a small portion of the South Hill Open Space Area, located to the immediate northeast of the park.

The Chumash Village MHP is also responsible for onsite electric transformers and individual gas meters at each coach unit. The cable system network is owned and maintained by the cable company.

RECENT UTILITY EFFORTS

The Chumash Village MHP District Board holds routine meetings and oversees the operations and repairs of the Chumash Village owned utilities. In addition to the District Board, there is a Planning Committee that provides recommendations to the Board. Some of the authorizations or improvements completed over recent years include:

- Water system improvements consisting of valve installations;
- Water main replacement behind a residence at the intersection of Cuyama Drive and Sisquoc Lane;
- Sewer cleaning and inspection on Lompoc Lane;
- During the December 12, 2014 meeting, the Board acted to authorize additional sewer cleaning on Lompoc Lane to address recent observed maintenance issues;
- A gas meter replacement plan in which 10% of the meters are replaced annually;
- In-stock supply of gas meters and transformers; and
- An on-call electrical sub for necessary repairs.

WATER DISTRIBUTION SYSTEM OVERVIEW

The Chumash Village MHP water distribution system is owned and operated by Chumash Village MHP, and is therefore considered a privately owned extension of the City of San Luis Obispo water distribution system. As a result, the park is responsible for the day-to-day operations of the system, short-term and long-term rehabilitation, operations and maintenance, and any necessary repairs or system upgrades. The Chumash Village MHP is also responsible for public health and safety requirements associated with the system.

The existing water distribution system was originally installed in 1971. The water distribution system is comprised of a series of single "dead-end" water mains, originating at the point of connection with the City of San Luis Obispo's water system, thus the water mains are not looped within the mobile home park. Chumash Village MHP has performed varying levels of minor repairs and improvements over the years, but for the most part, the system remains very similar to when it was first constructed.



The water system consists of approximately 13,500 linear feet of distribution mains ranging in diameter from 1.25-inch to 6-inch. Although the material type is not called out on the original utility plans, it is believed to be comprised of Asbestos Cement Pipe (ACP) with small sections possibly comprised of Poly-Vinyl Chloride (PVC). This assumption is based on information provided by representatives from Chumash Village MHP at the project kick-off meeting and during the subsequent onsite system assessment.

The table below summarizes the approximate pipe inventory.

Water Distribution System Pipe Inventory

Pipe Diameter (inch)	Pipe Length (ft)	Assumed Material
1.25	355	ACP
1.5	5,928	ACP
2	2,186	ACP
2.5	411	ACP
6	3,733	ACP

In addition to the pipes identified above, a total of eight fire hydrants are connected to the water system. Each of the fire hydrants is fed by a 6-inch water main. Isolation valves are currently installed at each hydrant location. The isolation valves act to control the amount of system loss following a hydrant failure or a vehicular collision. The Chumash Village Mobile Home Park also installed 3 additional valves throughout the park to assist in isolating the water distribution system during a main failure. A map of the existing water distribution system has been prepared and attached to this memorandum.

Water Use

The water distribution system has a single point-of-connection to the City's water system. The connection occurs on South Higuera Street near the park's entrance. Water consumption for the entire park is metered at that location through an existing 6-inch water meter. Because the park only has a single water meter, the monthly water bills are distributed equally amongst each of the individual coaches. As a result, Chumash Village MHP does not have a clear understanding of individual water consumption throughout the park and individual coach owners may therefore be paying more or less of their true share of the monthly water bills.

In order to better understand water consumption within the park, Wallace Group reviewed Chumash Village MHP's monthly water bills for operating years 2010-2012. The purpose of this review was:

1. To determine total average water consumption by month and compare those results against industry standards to assess the likelihood of leaks occurring within the Chumash Village MHP water distribution system.



2. To determine average monthly water use per coach, allowing Chumash Village MHP to compare these totals against probable construction cost estimates for installing new water meters at each coach location.
3. To determine average daily water demands for each coach that could then be input into hydraulic modeling software to assess the overall performance of the water distribution system during routine operation.
4. To determine base sewer flows in order to assess the performance of the existing Chumash Village MHP sewer collection system.

Average daily water consumption over the three-year period for the entire Chumash Village MHP is shown in the table below.

Average Daily Water Consumption – Entire Park (Gallons per Day)

Account No.	Service Address	Jan	Feb	Mar	Apr	May	June
023282-000	3057 HIGUERA	20,461	26,679	21,933	34,865	30,362	31,374
		July	Aug	Sept	Oct	Nov	Dec
		31,416	35,317	29,238	23,526	29,119	21,571

This data was also used to assess average daily water consumption for each of the individual coach units. The average daily water consumption for each of the coach units was computed by dividing the park's total daily water use by the total number of dwelling units in the park for the three year period. These values are provided in the table below.

Average Daily Water Consumption – Per Dwelling Unit (Gallons per Day)

Account No.	Service Address	Jan	Feb	March	April	May	June
023282-000	3057 HIGUERA	87	113	93	148	129	133
		July	August	September	October	November	December
		133	150	124	100	123	91

The average monthly water consumption for the entire park during operating years 2010-2012 varied between approximately 20,000 gallons per day (gpd) during the winter months and 35,000 gpd during the summer months. This equates to an average daily water consumption of approximately 90 gpd and 150 gpd per coach unit for the winter and summer months, respectively. The seasonal usage change is attributed to outside irrigation demands during the warmer months of the year. The lower-use winter months are therefore assumed to represent indoor water use only and were utilized during the subsequent sewer collection system assessment.

The water consumption values shown fall well within normal consumption rates for the park's demographics, indicating a low likelihood for significant leaks within the water distribution system for the timeframe considered.

Assuming an average "per-capita" rate of approximately 1.8 residents per household, Chumash Village MHP residents are averaging approximately 50 to 80 gpd per capita during the low-use and high-use months, respectively.

SEWER COLLECTION SYSTEM OVERVIEW

The Chumash Village MHP sewer collection system is owned and operated by Chumash Village MHP, and is therefore considered a privately owned extension of

the City of San Luis Obispo sewer collection. As a result, the park is responsible for the day-to-day operations of the system, short-term and long-term rehabilitation, operations and maintenance, and any necessary repairs or system upgrades.

The existing sewer collection system was originally installed in 1971. The system is comprised of nearly 13,500 linear feet of Vitrified Clay Pipe (VCP). The sewer mains range in diameter from 4-inch on the upper reaches of the system, to 8-inch on the lower reaches of the system where the system connects to the City's collection system on South Higuera Street. In addition, there are a small number of cleanouts located throughout the collection system used for cleaning. The table below summarizes the approximate sewer main inventory. A map of the existing sewer collection system has been prepared and attached to this memorandum.

Sewer Collection System Pipe Inventory

Pipe Diameter (in)	Pipe Length (ft)	Material
4	11,090	VCP
6	1,040	VCP
8	1,305	VCP

STORMWATER COLLECTION SYSTEM OVERVIEW

A portion of the City of San Luis Obispo's Stormwater Collection System is located within the Chumash Village Mobile Home Park. Chumash Village MHP is not responsible for the maintenance and operation of this collection system. Any ongoing operational issues should be addressed with the City.

The City's stormwater collection piping enters the Chumash Village Mobile Home Park at an inlet structure located in the rear of the parcel at 136 Malibu Drive. The inlet structure is shown in the photo below. At this location stormwater runoff, originating in the South Hills Open Space Area to the northeast, enters a 2-foot diameter corrugated metal pipe, passing beneath the mobile home coach and draining through the remaining portion of the City's collection system with the Chumash Village MHP.

The stormdrain piping traverses Cambria Lane, Chumash Lane, and Lompoc Lane before exiting from the Park near the intersection of Lompoc Lane and Cuyama Drive. Prior to exiting the Park, the pipe increases in diameter from 2-feet to 3.5-feet in order to accommodate additional stormwater runoff entering the collection system through numerous inlet structures located within the Chumash Village MHP roads listed above. A map of the existing storm water collection system has been prepared and attached to this memorandum.





ELECTRIC SYSTEM OVERVIEW

On October 28, 2014, Wallace Group conducted an on-site investigation as to the existing conditions of the electrical power services to the site in comparison with the Drawings-of-Record information provided. It was verified that electrical service is provided by PG&E via an overhead power line along the west side of the Chumash Village Mobile Home Park, behind the most westerly lots, north of the main entrance. PG&E service ends at a master PG&E transformer/switchboard located north of the main entrance as shown on the Drawings-of-Record Electrical Distribution Plan.

During the site visit, Wallace Group also verified that there were 10 private transformers at the locations shown on the Drawings-of-Record Plan. Each transformer is located at the backs of the mobile home lots as shown on the plans. The transformers are privately owned; therefore, they are maintained and operated by the Chumash Village Mobile Home Park HOA. Each coach has an electrical sub-meter and is most commonly located on a pedestal along the driveway side of the coach. The sub-meters are owned, maintained, operated and read by the HOA.

GAS SYSTEM OVERVIEW

On October 28, 2014, Wallace Group conducted an on-site investigation as to the existing conditions of the natural gas services to the site in comparison with the Drawings-of-Record information provided. It has been verified that the gas mains are owned and maintained by Southern California Gas Company. The gas main enters the Chumash Village Mobile Home Park from the northwest corner of the site and terminates at the master gas meter located along the north side of the Clubhouse-North building. At this point all gas lines serving individual coaches, buildings in common (such as clubhouses and laundry rooms), and swimming pool heater/pump houses, and the sub-meters to each facility are owned by the homeowners and maintained by the HOA.

According to the natural gas Drawings-of-Record distribution plan, the gas lines are noted as 1½", 1¼", and 1-inch lines. However, it is unclear by Drawings-of-Record the material of the gas mains. According to the Drawings-of-Record the gas mains are under the coaches and are encased in schedule 40 plastic sleeve piping. Each sub-meter is most commonly located on a pedestal along the driveway side of the coach. The sub-meters are owned, maintained, operated and read by the HOA.

TELEPHONE SYSTEM OVERVIEW

The telephone service for the Chumash Village Mobile Home Park is provided by AT&T. On October 28, 2014, Wallace Group conducted an on-site investigation as to the existing conditions of the telephone services to the site in comparison with the Drawings-of-Record information provided. According to the Drawings-of-Record the site telephone lines are constructed in a conduit in a joint trench with all other dry utilities. It is important to note that the Drawings-of-Record shows that the dry utility joint trench is in common with the (sanitary sewer and water) wet utilities. For this reason, care should be taken if any potholing or excavation of existing utilities occurs. To date there have been no reports known to Wallace Group of any disconnect or lack of telephone service due to the distribution system in common.



CABLE SYSTEM OVERVIEW

The cable service for the Chumash Village Mobile Home Park is provided by Charter Communications. On October 28, 2014 Wallace Group conducted an on-site investigation as to the existing conditions of the cable communication (TV) services to the site in comparison with the Drawings-of-Record information provided. According to the Drawings-of-Record the site the CATV lines are constructed in a conduit in a joint trench with all other dry utilities. It is important to note that the Drawings-of-Record shows that the dry utility joint trench is in common with the (sanitary sewer and water) wet utilities. For this reason, care should be taken if any potholing or excavation of existing utilities occurs. To date there have been no reports known to Wallace Group of any disconnect or lack of CATV service due to the distribution system in common.

UTILITY ASSESSMENT

On October 28, 2014 Wallace Group attended a project kick-off meeting with Chumash Village Mobile Home Park representatives. The purpose of the meeting was to gain a better understanding of the onsite utilities. During the meeting, the goals of the project study were confirmed and discussions focused on the details and history of each system. To aid in Wallace Group's understanding of the utility systems, Wallace Group received a copy of the original 1971 Utility Plans prior to the kickoff meeting. Following the kick-off meeting, Wallace Group completed an onsite utility assessment with a representative of Chumash Village MHP and a representative from Haven Partners, Inc. to document field utility locations and verify the accuracy of the 1971 Utility Plans.

Following the onsite assessment Wallace Group conducted an office-based evaluation of the Chumash Village MHP privately owned utilities to evaluate the capacity and performance of the system. The utility assessment followed standard industry assessment techniques based on the utility type and material identified. Concurrent with the evaluation, Wallace Group conducted meetings and coordinated with electric, gas, telephone, and cable companies to discuss their existing infrastructure within the park. The city owned storm water collection system was assessed, including the ability to harvest rainwater for reuse as a landscape irrigation supplement. The following provides the results of the utility assessment:

ENGINEERING STANDARDS

Prior to providing detailed discussion of the individual utilities, the following describes some important engineering standards used throughout the evaluation:

Utility Separation Requirement Overview

When buried water mains are in close proximity to non-potable pipelines, the water mains are vulnerable to contamination that can pose a risk of waterborne disease outbreaks. For example, aged sewers or stormwater collection systems may leak as a result of common defects. These defects may be attributed to structural failures, improperly constructed joints and/or subsidence or upheaval of the soil. Under such circumstances the surrounding soil becomes saturated. If a nearby water main is depressurized or a negative pressure occurs causing a vacuum on the water line, it is



possible to cross-contaminate the water line. For this reason, separation requirements exist for all public utilities.

Separation requirements for non-potable and potable pipelines are specified in Title 22, Chapter 16, Section 64570 and 64572 of the California Department of Health Services (DHS) Water Works Standard. Typically, separation requirements for newly constructed sewer and water pipelines require the potable water main be installed at least 10-feet horizontally from a sanitary sewer main that is located parallel to the water main.

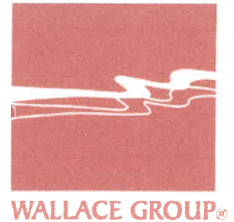
If the proposed alignment does not allow for this separation, additional provisions are required to protect the water main. These provisions usually include increasing the structural integrity of the pipe material and joints, sleeving the water line, or utilizing a continuous joint-free pipe within the zone of influence. It should be noted that that current DHS Water Standards indicate that *"In no case, should water mains and non-potable pipelines conveying sewage or other liquids be installed in the same trench"* (Reference 4).

The City of San Luis Obispo specifies separation criteria in their Construction Standard Specifications and Engineering Standards (Reference 1). Although Chumash Village MHP water and sewer systems are privately owned, the City's Specifications and Standards provide a good reference for the Chumash Village Mobile Home Park when considering future improvements. The City standards are available on the City's Public Works Department website at no charge to the public, or may be purchased in hard-copy format at the City Public Works Department office. A copy of City Engineering Standard Detail 6010 - Utilities Location is attached to this memorandum as reference.

Asbestos Cement Pipe

Asbestos Cement Pipe has been installed in water systems in North America since the 1930s but was discontinued in the early 1980s when health concerns associated with the mining, installation, removal, and disposal of asbestos products ended the selection and installation of new AC pipe. There was no evidence of water-born fiber related illnesses; therefore as a result, much of the pipe previously installed by that time still remains in the ground today. A survey conducted by the American Water Works Association (AWWA) in 2004 found that, on average, AC pipes constitute approximately 15–18 percent of the nation's water distribution and transmission systems (Reference 8).

AC pipe was installed with a 50-year design life; however recent studies indicate that AC pipe can last up to 150 years. The expected remaining service life for AC pipes, based on information collected from several utilities, vary significantly from utility to utility and even within utilities depending on the water quality and soil environments. AC pipes can deteriorate as a result of a variety of factors, including working environment and operational conditions, and eventually, when stresses exceed their strength, they fail. It should be noted, ACP is brittle in nature and easily friable, and in which case asbestos particles could be released to the air, which is hazardous. If an



AC pipe does fail and is to be replaced, the AC pipe is considered hazardous waste and must be handled with caution and disposed of properly. Follow applicable local, state, and federal laws when handling AC pipe.

Fire Hydrants

The Chumash Village Mobile Home Park maintains several fire hydrants onsite. In an emergency, it is essential that adequate fire hydrants are available for the fire department to access. Uniform Fire Code regulations require fire hydrants spaced no greater than 500 feet apart within residential locations.

In addition, it is recommended that the fire hydrants be flushed periodically to remove settled debris and/or aged water that may accumulate near dead end mains.

Isolation Valves

Isolation valves on a water distribution system allow an operator to shut down portions of the water system during emergencies or to perform repairs without having to shut down the entire system. The City recommends isolation valves be located at all fire hydrants and at all tee or cross water distribution system intersections.

All valves should be exercised annually, or as per manufacturer recommendations. Exercising the valves involves opening and closing the valves several times to clean off corrosion and scaling to keep the valves functioning properly. Valves that are not frequently exercised become corroded and may become stuck in the position that they were last left (open or closed). When subsequent attempts are made to exercise the valves after long periods of inactivity, it is possible to break the valve stems, requiring replacement of the valve prior to the end of its anticipated useful life.

Water System Pressures

The City of San Luis Obispo utilizes Title 22, Chapter 16, Section 64570 and 64572 of the California Department of Health Services (DHS) Water Works Standard to set system pressures. Ideally, normal operating (static) pressures will be within the range of 40 to 80 psi. This is the range that most people find comfortable and which will serve most fire sprinkler systems. Pressures higher than 80 psi are acceptable within the distribution system, but should be reduced to 80 psi at the service connection to prevent water hammer effects or leakage through rapidly weakening washers and seats.

Fire Flow

The City of San Luis Obispo relies on the most current Uniform Fire Code to identify the fire flow requirements throughout the City. For residential units without sprinklers, the required fire flow is 1,500 gpm.

Sewer System Requirements

City Engineering Standards require a minimum 8-inch diameter pipe for all sewer mains and a minimum 4-inch diameter pipe for all service laterals extending from the main. In addition, City Engineering Standards require that sewer pipes be installed with adequate slope through all sewer mains in order to provide sufficient cleaning velocities. The slope required varies the pipe material and diameter, but typically a slope of 1%-2% is ideal.



Typically, manholes should be installed 1) at no greater than 400 foot apart along straight runs, 2) where two or more sewer mains join together, or 3) where a bend or change in pipe alignment occurs in a pipe. The purpose of a sewer manhole is to provide access to the pipe interiors, allowing for routine cleaning, maintenance, video inspection and assessment, and emergency repairs to the system.

WATER DISTRIBUTION SYSTEM EVALUATION

Wallace Group evaluated the water distribution system based on several criteria, which included:

- Pipe Material and Age
- Location
- Maintenance
- Adequacy of the Water Distribution System

The following provides the results of this evaluation.

Pipe Material and Age

As noted previously, the water distribution system is comprised primarily of Asbestos Cement Pipe. AC pipe does not pose immediate health and safety concerns if the pipe remains in-tact. If the pipe were to fail, air-borne particles and fragmented pipe do pose a health concern and should be handled properly. AC pipe is a brittle material. Once the pipe starts to fail, it is difficult to contain the failure to an isolated area, thus requiring substantial pipe replacement at that time.

As noted previously, AC pipe has a useful life between 50 and 150 years depending on soil and water quality conditions. Wallace Group is unable to quantify the exact useful life remaining in the Chumash Village Mobile Home Park, except to note that the water distribution system is nearing the lower spectrum of useful life. As noted in the paragraph above, AC pipe is brittle, thus when failures do occur, due to age, soil conditions, water quality, etc., they are more difficult to contain and require large sections of the water main to be replaced.

Location

The existing water mains share a common utility trench with each of the other onsite utilities. This causes potential cross-contamination issues due the close proximity of the water lines to the existing sewer lines. As previously discussed, the practice of utilizing a common trench for sewer and water alignment is strictly prohibited for all new construction under the current California Code of Regulations requirements. Current code requirements require a 10-foot minimum separation between water and sewer pipes unless alternative construction practices are approved to reduce the cross-contamination potential.

Maintenance

In addition to the water mains being in close proximity to the sewer mains, the existing shared utility trenches, and therefore the water distribution mains, are located beneath the coaches. This alignment is not ideal because it reduces accessibility to the pipes and facilities during times of repairs and maintenance.



Adequacy of the Water Distribution System

As noted previously, it is recommended that fire hydrants be installed every 500 feet within residential areas. The Chumash Village Mobile Home Park currently has 8 fire hydrants. To meet current standards, additional hydrants are recommended to limit spacing between hydrants to no more than 500 feet.

The water system was originally constructed with a minimal number of isolation valves throughout the system. Chumash Village MHP has recognized this deficiency and in recent years has installed isolation valves at key locations on Chumash Drive to allow for such shutdowns north of Chumash Drive. Attempts were made to install additional isolation valves on Lompoc Lane, but the attempts to locate the water lines were unsuccessful. It is recommended that additional isolation valves be installed to reduce the impacts to all customers during emergency or routine shutdowns of the water distribution system.

In order to estimate system pressures and flows within the existing water system during various flow regimes, a computer model was developed using Haestad's Water CAD computer program. The model was developed utilizing information available from the original 1971 utility plans with additional site parameters, such as ground surface elevations and known water demand data incorporated into the water model. The model was not calibrated against field hydrant tests, and is therefore assumed to provide an approximate system representation. Once developed, model runs were performed to assess the overall performance of the system. Various flow scenarios were run in the model, including a scenario for high user-demand and a scenario for simulated fire flow from one of the eight park fire hydrants. The results are as follows:

- **Peak Hour Demand:** The model results from the first scenario indicate that under routine high user-demand scenarios, the system performs primarily within acceptable limits. Pressures observed throughout the system ranged from approximately 74 psi to 85 psi, indicating adequate water deliveries to the coaches. Chumash Village MHP may want to inform individual customers that a customer installed pressure reducing valve may be advisable to protect plumbing against the higher pressures that may be occurring.
- **Fire Flow Demand:** For the purposes of the model run, 1,500 gpm was applied to a fire hydrant distal to the City water connection. The model results from the second scenario indicate that during a simulated fire flow scenario, the system is not-capable of providing adequate water service to portions of the park. The results indicate that a large number of pipes in the vicinity of the fire flow would be subjected to negative pipe pressures, drawing vacuum on the lines. This is due to the small diameter pipe sizes used for many of the water mains within the park and the dead-end water mains.

During the fire flow event, the water lines have the ability to pull water into the line from outside sources or drain water heaters within each coach. As an example, if a garden hose were run to a swimming pool without an adequate backflow device, the hose could draw the water from the pool into the potable water system. If the water system has pipes with small leaks, those leak sites



could pull ground water (potentially saturated with sewage from a leaking sewer pipe) into the potable water line.

Uniform Fire Code Regulations (UFC) requires publicly owned water systems to maintain 20 psi pressure at fire flow. In the case of the model scenario, pressures as low as -28 psi were observed. Additionally the pipe velocities exceed maximum velocities indicated by the UFC during the model runs.

The model indicates that the existing water system can accommodate fire flows up to approximately 1,000 gpm while still maintaining adequate pressure and flow to the remaining portions of the park.

The cause of the inadequate fire flow for Chumash Village Mobile Home Park is two-fold: undersized pipes and inadequate looping of the water distribution system. The existing water distribution system contains water mains that range between 1.25- and 6-inch. The smaller water mains are unable to carry the required fire flow. In addition, pipelines that do not loop to other nearby pipe alignments, are subjected to more significant pressure fluctuations and water quality issues resulting from the possibility of aged water and sedimentation of debris near the dead-end.

SEWER COLLECTION SYSTEM EVALUATION

Wallace Group evaluated the sewer collection system based on several criteria, which included:

- Pipe Material and Age
- Location
- Accessibility and Maintenance
- Adequacy of the Sewer Collection System

The following provides the results of this evaluation.

Pipe Material and Age

Up until the mid-1970's vitrified clay pipe was the dominant material specified for gravity sewer collection systems, due to affordability, ease of installation, and resistance to corrosion. VCP is believed to have possible useful lives approaching 80-100 years. Early VCP installations often resulted in short pipe lengths, increasing the number of joints required throughout its lengths. The quality of early VCP jointing often relied on the level of effort employed by the installer, as early jointing often consisted of mortar only. By the 1970's VCP pipe joint had improved and it is assumed that the Chumash Village MHP system has gasketed joints, though this has not been confirmed.

Active soil movement can cause premature defects and failure of VCP sewer due to misalignments, protruding joints, and cracks. The defects can either lead to infiltration (groundwater entering the pipe), exfiltration (sewage existing the pipe), or collapse.

Location

The existing sewer mains share a common utility trench with each of the other onsite utilities. This causes potential cross-contamination issues due the close proximity of the water lines to the existing sewer lines. As previously discussed, the practice of



utilizing a common trench for sewer and water alignment is strictly prohibited for all new construction under the current California Code of Regulations requirements. Current code requirements require a 10-foot minimum separation between water and sewer pipes unless alternative construction practices are approved to reduce the cross-contamination potential.

Accessibility and Maintenance

In addition to the water mains being in close proximity to the sewer mains, the existing shared utility trenches, and therefore the sewer mains, are located beneath the coaches. This alignment is not ideal because it reduces accessibility to the pipes and facilities during times of repairs and maintenance.

Another issue of concern is the fact that the sewer collection system was constructed without manholes and only a few sewer cleanouts. Because there are no manholes, Chumash Village MHP is limited in its ability to access the system and perform routine inspection and maintenance of the collection system.

Adequacy of the Sewer Collection System

The Chumash Village MHP system is somewhat unique in that the sewer mains can be seen as “shared” service laterals, meeting the 4-inch diameter requirement set by City standards. However, smaller 4-inch diameter pipes are far less accommodating at transporting sewage debris from multiple homes (i.e. rags, and grease and other solids), and are therefore more likely to clog, particularly when the sewer pipe is constructed with relatively flat slopes.

The majority of the sewer mains in the collection system are observed at adequate slopes (i.e. 2.0% or greater). However, portions of the collection system within the vicinity of Lompoc Street are considered to have substandard slopes. Historically this area has experienced clogs and flow issues. This is primarily due to the substandard pipe slopes and small diameters observed in that area. Fortunately, access is available to this portion of the system through a sewer cleanout located at the intersection of Lompoc Street and Chumash Drive for cleaning. Due to the frequency of blockages in this area, it is recommended that this portion of the sewer main be placed on a routine cleaning schedule. A frequency of once per quarter to every 6 months is recommended unless this frequency dictates that a greater or lesser frequency is required over time.

STORMWATER COLLECTION SYSTEM EVALUATION

Since the Stormwater Collection System is owned and operated by the City of San Luis Obispo, Wallace Group did not evaluate the condition and adequacy of the stormwater collection system. During Wallace Group’s initial site visit with Chumash Village MHP, it was indicated that the Chumash Village Mobile Park would like to consider opportunities for “harvesting” the stormwater runoff entering the City’s inlet structure. The stormwater harvested would be re-purposed to supplement landscape irrigation demands throughout common areas of the mobile home park.

The City of San Luis Obispo encourages rainwater harvesting and the American Rainwater Catchment System Association (ARCSA) provides useful recommendations for developing and using such systems. San Luis Obispo City Code indicates that “*Stormwater drainage may be directed to an approved rainwater*



harvesting system and used as an alternate source of water for non-potable uses as approved by the building official of the San Luis Obispo County Environmental Health Department” (Reference 3).

The term “Rainwater Harvesting System” however is defined in the City Code as “a storm drainage collection system that collects rainwater from the roof area of a structure.” Additionally, the storm water collection system is owned and operated by the City of San Luis Obispo. In addition to meeting Code requirements referenced above, utilizing such a source to harvest rainwater would first require written permission from the City. Coordinating with the City for such authorization is beyond the scope of our current services though could be included in any future services provided by Wallace Group. It is assumed at this time that the City would not object to a properly designed and maintained system as it would lessen the downstream impacts of the City’s system.

Wallace Group evaluated the amount of water that may be expected to enter the City’s inlet structure during a typical rain event (2 year recurrence, 3.05” of rain) and concluded that even during very minor storms, in excess of 60,000 cubic feet (449,000 gal) of water passes through the inlet structure and would therefore be available for harvesting.

ELECTRIC UTILITY EVALUATION

On November 12, 2014 Wallace Group met with JT Haas, an Industrial Power Engineer for PG&E. It was presented to Mr. Haas of Chumash Village Mobile Home Park’s desire to upgrade their electrical service system and place each of the mobile home owners/lots as a direct customer of PG&E, rather than the existing sub-metering. This would be accomplished by removing/abandoning all dry (“wire”) utilities from behind and/or from under the coaches, and relocate the service lines in new conduits in a common trench with the other “dry” utilities in the streets. New electrical meters will be needed for each coach on site. New electrical panels with capacity for higher loads (e.g. 100 amp panels) than existing will also be possible.

GAS UTILITY EVALUATION

On November 12, 2014 Wallace Group met with the Gas Company Field Planners Brad Leach and Claudia Turner on site. It was mentioned to the field planners that the proposed improvements would involve converting the master-metered and privately owned sub-metered natural gas system to direct utility service owned and operated by Southern California Gas Company. It was pointed out by the field planners that in order to do so, new gas lines would need to be constructed within the streets and service to a meter to be located along the street frontage of each lot. An easement would be necessary so that the Gas Company can access and maintain the new system. The old gas lines will need to be either removed or abandoned in place.

TELEPHONE UTILITY EVALUATION

On November 5, 2014 Wallace Group attempted to contact the AT&T Service Planner Representative for the San Luis Obispo area. The AT&T Service Planner was reluctant to provide any assistance at this time, citing that no upgrades were either available or warranted since service has been uninterrupted to the existing



homeowners. It is therefore recommended that should the project move forward a conduit be placed in the new trench in common to accommodate future telephone upgrades/conversions.

CABLE UTILITY EVALUATION

On November 5, 2014 contact was made with the local communications provider at Charter Communications. An on-site meeting was arranged but never occurred. In conversations with their Construction Coordinator, Charter Communications is interested in upgrading their antiquated services with new should the Project move forward. Should this occur, it is recommended that additional conduit be placed in the new trench in common to accommodate future communications upgrades.

OVERALL UTILITY RECOMMENDATIONS

As recognized by the Chumash Village MHP, the existing onsite utilities, including the park-owned water distribution and sewer collection systems, are aged and beginning to show signs of wear. Eventually, these systems will require significant upgrade and/or replacement. Although it is difficult to accurately predict when the utilities will reach the end of their useful, it is clear to see the importance of being properly prepared for such an event.

Chumash Village MHP is committed to maintaining the existing park utilities throughout the remainder of their useful life and is currently in the initial planning phase of long-term utility renovation and replacement. The Chumash Village Mobile Home Park's renovation plan consists of the following four phases:

- Phase 1: Existing Utility Research & Utility Recommendations Memorandum
- Phase 2: Funding Research
- Phase 3: Construction Documents
- Phase 4: Construction

Consistent with Phase 1 of the plan, this memorandum concludes with the following utility recommendations and preliminary planning-level cost estimate for renovating the existing facilities.

WATER DISTRIBUTION SYSTEM RECOMMENDATIONS

As indicated, the Chumash Village MHP water distribution system is subject to substandard pipe alignments which place the pipe extremely close to potential sources of cross-contamination, prohibit access to the system facilities, and result in insufficient water deliveries to the coaches during fire-flow scenarios. In addition, the Asbestos Cement Pipe is nearing the lower spectrum of useful life.

Wallace Group recommends that Chumash Village Mobile Home Park initiate Phase 2 of this project by investigating available funding sources for relocating the existing water distribution system from its current, substandard alignment beneath the coaches, into the park roadways. This would involve constructing a new water system to facilitate this improvement.

Relocating the water system into the roadways is the preferred water system improvement recommendation. It is recommended that Chumash Village MHP initiate design and construction of the proposed water distribution system within the next 10



years. A preliminary planning-level cost estimate has been prepared for this task. The cost-estimate is based on a conceptual design consisting of the following system components.

- A dedicated looped fire system consisting of 6-inch Poly-Vinyl Chloride (PVC) C900 water pipe serving 12 fire hydrants spaced throughout the park at separation no greater than 500 feet (4,800 feet).
- A dedicated looped water distribution system providing water services to the coach units and ancillary buildings through 2-inch Poly-Vinyl Chloride (PVC) C900 water pipe (7,250 feet) with the following additional system attributes.
 - Single 5/8-inch water service connections to each of the individual coaches.
 - Two air-vac units to accommodate release of entrained air at system high points.
 - Isolation valves at tees or cross intersections.

If the system is not able to be constructed within the next 10 years, the park may want to consider the following alternatives.

- Loop the existing water distribution system by joining dead-end sections of the existing water lines to allow for more stable system pressure distributions and sustained flow during fire flow scenarios.

The following maintenance recommendations are made for the existing water distribution system for the immediate and near-future.

- Install additional isolation valves at key locations throughout the system to allow for system shutdown and repair of the water line following pipe failure. Ideally the valves should be installed such that the water shutdown only affects those in the immediate area of the system failure.
- Develop and implement a valve exercising program that provides continued and routine preventative maintenance to the existing system valves to extend the useful life of the valves and ensure that the valves remain functional for shutdowns. This recommendation should be employed on all home shutoff valves as well. It is recommended that valves be exercised annually, or as per manufacturer's recommendations
- Develop and implement a fire hydrant flushing program that provides routine flushing of the water line to remove sediment and improve water quality within the pipes and near dead-end mains. It is recommended that flushing be performed annually. The HOA should contact the City of San Luis Obispo to discuss the operation and maintenance of the fire hydrants as part of their fire hydrant flushing program.
- Develop a list of preferred repair contractors and a set of procedure for implementing various types of repairs in an effort to reduce response time following a system failure. Consideration should be given to pipe breaks beneath coaches, fire hydrant collisions, valve failures, etc. Additional consideration should be given to response procedures for failures occurring outside of normal working hours and during holidays.



SEWER COLLECTION SYSTEM RECOMMENDATIONS

The Chumash Village MHP sewer collection system is subject to substandard pipe alignments which place the pipe extremely close to potable water piping, prohibit access to the system facilities, and result in occasional blockages and flow issues due to the small pipe diameter and minimum slope within sections. Additionally, the collection system lacks manholes, prohibiting access to the system and the ability to inspect and assess the existing condition and remaining useful life of the vitrified clay pipe.

Wallace Group recommends that Chumash Village Mobile Home Park initiate Phase 2 of this project by investigating available funding sources for relocating the existing sewer collection system from its current, substandard alignment beneath the coaches, into the park roadways. This would involve constructing a new sewer system to facilitate this improvement.

Relocating the sewer system into the roadways is the preferred sewer system improvement recommendation. It is recommended that Chumash Village MHP initiate design and construction of the proposed sewer collection system within the next 10 years. A preliminary planning-level cost estimate has been prepared for this task. The cost-estimate is based on a conceptual design consisting of the following system components.

- Approximately 5,600 feet of 6-inch Poly-Vinyl Chloride (PVC) SDR sewer pipe serving the mid and upper reaches of the collection system.
- Approximately 1,700 feet of 8-inch Poly-Vinyl Chloride (PVC) SDR sewer pipe serving the lower reaches of the collection system.
- Approximately 13 precast manhole structures.
- Approximately 10 clean out structures.
- Service connections at each coach and ancillary building structure.

If the system is not able to be constructed within the next 10 years, the park may want to consider the following alternatives.

- Extend the existing sewer laterals, located beneath the coach units, into the roadways along their existing alignments and install sewer cleanouts at the end of the newly extended sewer mains, providing access to the existing sewer mains for cleaning and inspection.

The following maintenance recommendations are made for the existing sewer collection system for the immediate and near-future.

- Locate and identify all of the existing sewer cleanouts on the system. Develop and implement a sewer cleaning program that provides continued and routine preventative cleaning of the accessible sewer lines through the clean outs identified.
- Develop a list of preferred repair contractors and a set of procedure for implementing various types of repairs in an effort to reduce response time following a system failure. Consideration should be given to pipe breaks beneath coaches, fire hydrant collisions, valve failures, etc. Additional



consideration should be given to response procedures for failures occurring outside of normal working hours and during holidays.

DRY UTILITY RECOMMENDATIONS

The dry utilities are all privately owned and operated by the individual companies. Although each of the utility companies does not note that the existing service is substandard, each company would be supportive of upgrading and replacing the services to each coach and relocating the dry utilities to the street in lieu of their current location under the coaches. This relocation, installation of new meters, upgrades on control panels, etc would all be at the Chumash Village Mobile Home Park's expense.

The utility companies made mention of the California Public Utility Commission (CPUC) three-year Pilot Program beginning January 1, 2015. The Mobile Home Park Utility Upgrade Pilot Program is specific to aiding mobile home parks to replace aging natural gas and electric systems and converting them from privately owned and operated systems to new utility-owned systems.

On November 19, 2014 Wallace Group attended a seminar in Ventura hosted by Southern California Gas Company specific to the CPUC Mobile home Park Utility Upgrade Program. The purpose of the three-year Pilot Program is based on safety, replacing antiquated, leaky private systems with new utility-owned distribution systems, and getting the MHP out of the utility service business. If chosen for the Pilot Program, the Gas Company will bear the cost for construction up to and including the meter. Funds are available through the CPUC to convert approximately 10 percent of potential eligible (California) MHP residences. In order to be considered for the Pilot Program, a Form of Intent must be filled out and submitted to the CPUC and Southern California Gas no earlier than January 1, 2015. It is recommended that Chumash Village Mobile Home Park take advantage of this opportunity and submit the Form of Intent for consideration.

ENGINEER'S ESTIMATE OF PROBABLE COST

A conceptual planning level cost estimate is provided in the table for the construction of a new water distribution and sewer collection system within the Chumash Village MHP roadways. This estimate includes a 25% construction contingency. The cost estimate also includes anticipated soft costs (permitting, engineering, inspection, construction management) for the project. As noted in the table, the cost to replace the water and sewer facilities is estimated to be approximately \$3.5 million.

Based on the amount of available funding identified during Phase 2 of this project, Chumash Village MHP may want to consider implementing these improvements in phases. If the preferred water and sewer improvement projects are to be constructed in phases, it is recommended that the water system be constructed ahead of the sewer system as the water system is more closely tied to public health.

Wallace Group is unable to estimate the cost of upgrading the dry utilities at this time without more discussion and input from the utility companies on size of conduits required and other factors that will affect the costs. If successful with the Pilot Program noted above, the cost borne by the Chumash Village Mobile Home Park will be significantly reduced. A typical budgetary estimate used during the preliminary



stages of utility upgrades is \$1,000,000 per mile of trench. There is estimated 1.4 miles of trench required within the park. Therefore, from a budgetary perspective, the cost to upgrade the dry utilities will be approximately \$1.4 million. It is recommended that a 25% contingency factor be applied to this estimate when evaluating funding opportunities, resulting in an overall project cost of \$1.75 million.

Therefore, to replace all utilities in the Chumash Mobile Home Park, it is estimated that the total cost could be as high as \$5.25 million in 2014 dollars (ENR Index 9870) or approximately \$22,250 per coach. *Note: the cost for the project should be escalated to the year of mid-construction based on the ENR Index to account for inflation.*

It is recommended that Chumash Village Mobile Home utilize the Pilot Program opportunity as well as identify any low interest loans or grant opportunities to fund the upgrades during Phase 2 of this project.

Conceptual Planning Level Opinion of Probable Cost					23-Dec-14
Chumash Village Mobile Home Park - Water and Sewer Realignment Project					
ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT	TOTAL
GENERAL CONSTRUCTION					
1	Mobilization	1	LS	\$10,000	\$10,000
2	Water Pollution Control Program	1	LS	\$5,000	\$5,000
GENERAL SUBTOTAL					\$15,000
WATER DISTRIBUTION SYSTEM					
3	2" C900 Pipe (Std Trench) - Dedicated Service Pipe	7,250	LF	\$45	\$326,250
4	6" C900 Pipe (Std Trench) - Dedicated Fire Pipe	4,800	LF	\$45	\$216,000
5	Service Connections at Coaches (excl. water meter)*	236	EA	\$500	\$118,000
6	Air Vac and Blowoff Valves	2	EA	\$2,000	\$4,000
7	Fire Hydrant	12	EA	\$3,500	\$42,000
8	Misc Valving and Appurtenances	1	LS	\$5,000	\$5,000
SEWER SUBTOTAL					\$711,250
SEWER COLLECTION SYSTEM					
9	6" SDR Pipe (Std Trench)	5,600	LF	\$45	\$252,000
10	8" SDR Pipe	1,700	LF	\$65	\$110,500
11	Precast Manhole Structure	13	EA	\$4,500	\$58,500
12	Clean Out Structure	10	EA	\$650	\$6,500
13	Service Connections at Coaches	236	EA	\$450	\$106,200
14	Misc Piping and Appurtenances	1	LS	\$120,000	\$120,000
SEWER SUBTOTAL					\$653,700
SOFT COSTS					
15	Civil Engineering (Wallace Group)	1	LS	\$110,396	\$110,396
16	Geotechnical Engineering (Earthsystems)	1	LS	\$6,600	\$6,600
17	Permit and Inspection Fees (DWR, County, RCD)	1	LS	\$10,000	\$10,000
18	Construction Staking	1	LS	\$7,500	\$7,500
SOFT COST SUBTOTAL					\$134,496
PROJECT BASE ESTIMATE SUBTOTAL:					\$2,894,396
CONTINGENCY AT 25%:					\$578,879
TOTAL ESTIMATED PROJECT COST:					\$3,473,275
NOTES: * Service Connection including 5/8 water meter installation is estimated at \$2,200 EA (\$519,200 Total)					



REFERENCES

1. City of San Luis Obispo Standard Specifications & Engineering Standards, 2014
2. City of San Luis Obispo Sewer System Management Plan, October 2009
3. City of San Luis Obispo 2013 Construction & Fire Code Amendments
4. American Water Works Association (AWWA)
5. State of California Department of Health Services Guidance Memo No. 2003-02: Guidance Criteria for the Separation of Water Mains and Non-Potable Pipelines, dated April 14, 2003.
6. California Department of Public Health, Title 22, Chapter 16, Section 64570 and 64572.
7. *Long Term Performance of Asbestos Cement Pipe*, Water Research Foundation, January, 2013, Hu-Wang-Chowdbury.
8. *ASBESTOS CEMENT PIPE: WHAT IF IT NEEDS TO BE REPLACED?*, HDR Engineering, Inc., Williams-Aspern.

ATTACHMENTS

The following attachments are included with this memorandum.

- Chumash Village Mobile Home Park Water Distribution System Location Map
- Chumash Village Mobile Home Park Sewer Collections System Location Map
- City of San Luis Obispo Storm Water Collection System Location Map
- City of San Luis Obispo Standard Detail 6010 – Utilities Location

Section

1

Operators Qualification Site Information

Park Name Chumush Village MHP
Address 3057 S. Higuera
Luis Obispo, CA 93401

HCD / PUC ID# 40-0166/2541

Operator Chumush HOA

Number of Spaces 235 # of feet of piping 9,480

Number of Master Meters 1

Map of Gas Lines ☒ Yes ☐ No

Piping Material: ☒ Steel Amount

☐ PVC Amount

☐ P.E. Amount

Cathodic Protection: ☒ Impressed

☐ Sacrificial

☐ Exempt

Year System Built: 1972

Main Pressure: ☐ Low (no service regulators)

☒ Intermediate (has service regulators)

☐ System Mixed

Qualified

On-Site Personnel John Mudge Christine Escartin