

CRESCENTA VALLEY WATER DISTRICT

2700 FOOTHILL BOULEVARD
LA CRESCENTA, CALIFORNIA

Agenda for the Meeting of the Engineering Committee
of the Crescenta Valley Water District

To be held on

August 9, 2018 at 9:30 AM

Posted August 8, 2018 at 9:00 AM

Call to Order

Adoption of Agenda

Information Items

1. Discussion on Status of CVWD's Advanced Metering Infrastructure (AMI) Program
 - Presentation by Brett Foreman at WaterSMART on Preparing for AMI
2. Discussion on Proposal for Groundwater Modeling and Evaluation for Potential of MTBE Recurrence in the Verdugo Basin, Project M-995
3. Discussion about 16-inch Water Main Break at Raymond & Stevens
4. Discussion of Water Main Easements at Quail Creek Channel and 3100 Block of Brookhill
5. New Development at 4201 Pennsylvania (28 townhomes) – Acceptance of water main, fire hydrants, water services and easements
6. FY 18/19 – Update of Capital Improvement Project (CIP) Program - Project Schedule

Public Comments

At this time, members of the public shall have an opportunity to address the Committee on items of interest that are within the subject matter jurisdiction of this Committee. This opportunity is non-transferable and speakers are limited to three (3) minutes each.

Committee Member's Request for Future Agenda Items

Next Engineering Committee Meeting – September 20, 2018

Adjournment

CRESCENTA VALLEY WATER DISTRICT

STAFF REPORT

Information Item No. 1
August 9, 2018

To: Engineering Committee
From: David S. Gould, P.E. – District Engineer
Subject: Status of the District's Advanced Metering Infrastructure (AMI) Program

INFORMATION ITEM:

Discussion on Status of CVWD's Advanced Metering Infrastructure (AMI) Program

- Presentation by Brett Foreman at WaterSMART on Preparing for AMI

BACKGROUND:

- Presentation to Board – February 2018 – Broken down into three (3) phases
 1. Smart Meters – Meter Replacement
 2. Communications & Data Collection – wireless communication infrastructure
 3. Data Management System – Water use info and data; Customer Outreach
- Estimated Cost - \$2.53M
- Completion date – Estimate July 2020

DISCUSSION:

The following is a status summary of CVWD's AMI Program:

1. Smart Meters – Water Meter Replacement Program
 - Replaced 5,500 – ¾-inch meter; 1,457 remaining
 - Replaced 515 – 1-inch meter; 335 remaining
 - FY 18/19 – working on Zones 1, 2 & 3; to start in Sept. 2018
 - Does not include 1-½-inch to 4-inch meters and fire services
 - Does not include radio transceivers; Under Review
2. Communications & Data Collection
 - Communication – Radio or Cellular; Under Review
 - Pilot Study – Need to reach out to AMI providers
 - Storage of Data – CVWD or Vendor; Under Review
3. Data Management System
 - Customer Access to Website Portal
 - High Water Use/Leak Detection
 - Public Outreach
 - Emergency Alerts

At the 2/27/18 presentation, the Board requested that staff look into a small program (i.e. pilot program) and to gather more information on implementation of the data management system.

Staff has met several times with Brett Foreman from WaterSMART, Inc. to discuss their data management software. WaterSMART is a company that provides software and resources that can be used to provide outreach to customers on high water use, potential on-site leaks and provide useful water efficiency information. Typically, this information is provided to a customer after an AMI program has been installed and real-time data can be used.

However, agencies throughout the State that have not implemented AMI, have been utilizing WaterSMART's software (or other similar company's software) to provide water use data and alerts to its customers.

Staff has requested Mr. Foreman to provide a short presentation on the benefits of starting early in the AMI process and it would give CVWD the ability to reach out to customers for possible leaks and high water bills in a suitable time frame. In addition, implementing the data management system at this stage will assist CVWD's limited staff time to complete this task in a timely manner.

RECOMMENDATION:

Staff will use the information provided by WaterSMART and its own extensive AMI research to prepare a request for quote (RFQ) to provide a data management system that can be integrated with CVWD's billing system and provide an additional tool to communicate with its customers.

Preliminary Project Schedule:

Task	Date
Presentation to Engineering Committee	August 9, 2018
Prepare preliminary RFQ for review at Engineering Committee	September 20, 2018
Presentation at Board Meeting	September 25, 2018
Send out RFQ	October 1, 2018
Engineering Committee – Review RFQ	October 18, 2018
Award Contract	October 23, 2018
Notice to Proceed	November 1, 2018
Complete Data Management System	May 1, 2019

Preliminary Project Cost - \$40,000 was included in the FY 18/19 Capital Outlay Budget for AMI. This cost does not include annual software maintenance costs estimated at \$10,000 per year, which will need to be added to future expense budgets.

Prepared & Submitted by:



David S. Gould, P.E.
District Engineer



Preparing for AML: Customer Perspective

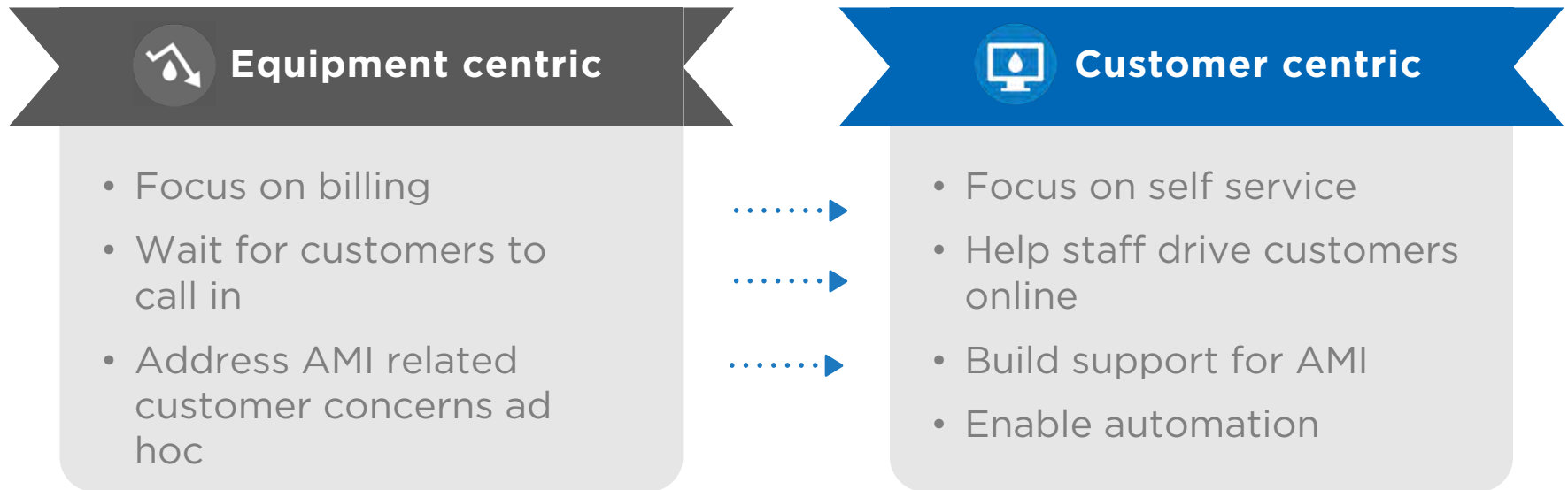
PREPARED FOR CRESCENTA VALLEY WATER DISTRICT, August 9, 2018

Brett Foreman, Client Solutions
bforeman@watersmart.com

The benefits of AMI are clear:

- Better communication with customers regarding leaks, high water consumption, and water meter replacement
- Encourages water conservation by providing customer real-time usage information
- Reduce billing disputes to increase customer satisfaction and decrease staff time
- Accessibility to important information or available from CVWD
- Provide recommendations to encourage water conservation and improve household water efficiency
- Provide Alerts (Text, email, or voice) on water consumption or an emergency event
- Improve CVWD's Public Outreach

But how do we get customers online?



One evening in Morgan Hill, CA...



9:39pm

A user logged into the Customer Portal.



9:47pm

She investigated a leak that was flagged on her account.



9:53pm

She indicated that she found the leak (it was her toilet).



9:58pm

She enrolled in My Use Notifications, to be alerted when she uses 2X her typical use.



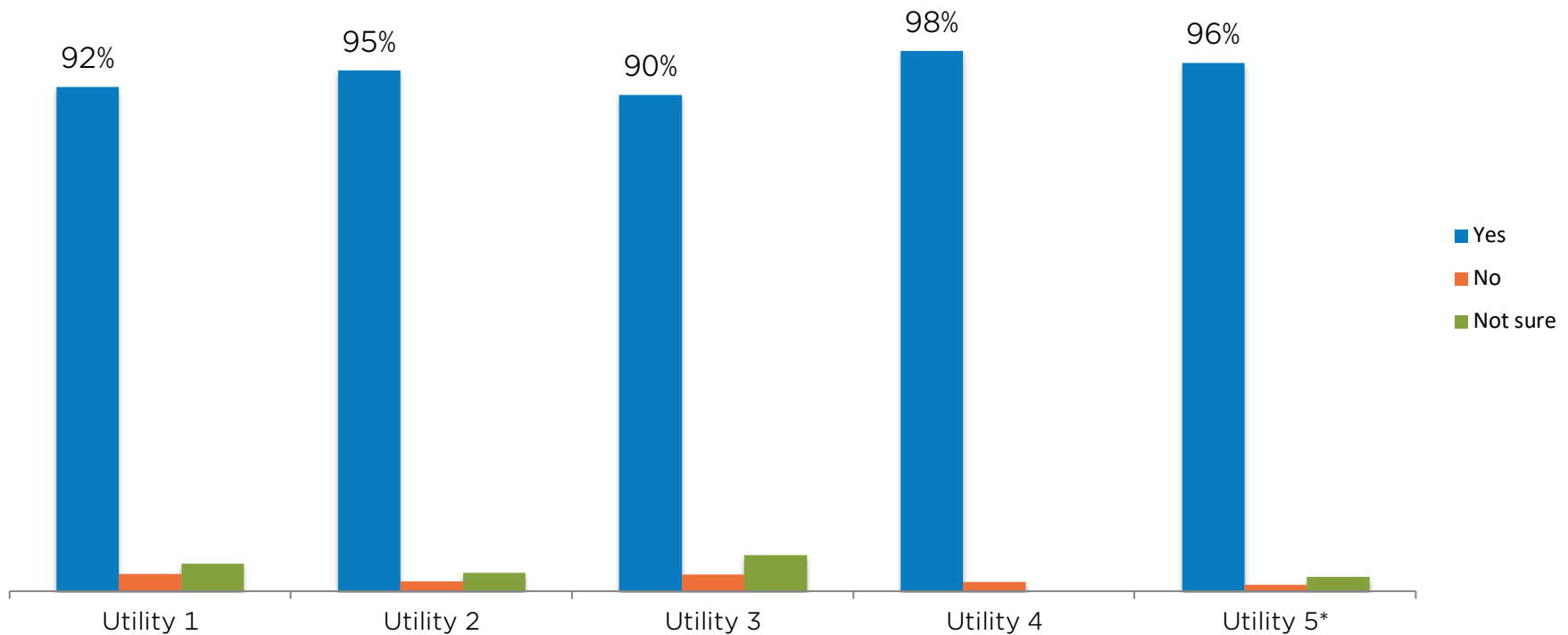
10:00pm

She visited the "Ways to Save" page.



Drive customers online with leak alerts or water reports

Do you find leak alerts valuable and wish to continue receiving them?



Partner Story

Glenview, Illinois

Digitizing manual staff processes

The Village of Glenview was spending 10 hours of staff time each week notifying customers about leaks in a highly manual process that involved staff phoning customers and sending follow-up letters thru the mail. In addition, Glenview had almost no emails for their customers and as such had no way of communicating with them digitally. WaterSmart solved both these issues by sending automated print leak alerts, which saved Glenview's staff valuable time and resulted in 20 percent of alert recipients registering for the Customer Portal, where they will be digitally engaged.

“We are extremely pleased with print leak alerts. It saves staff a lot of time and effort”



Jody Ruiz
Resolution Center Supervisor



ACCOUNTS:
16,131

STAFF TIME SAVED:
10 hours per week

RESPONSE RATE:
20 percent registration

Partner Story

Santa Margarita Water District, CA

Enhancing Engagement Digitally

Santa Margarita was challenged to develop an effective strategy to engage with their customers in the absence of a local media market to rely on. They utilized Group Messenger to send targeted, personalized messages via email, text, and automated voice in order to promote their annual water festival.

“Having greater visibility into engagement makes a huge difference.”



NATE ADAMS
WATER EFFICIENCY
ADMINISTRATOR



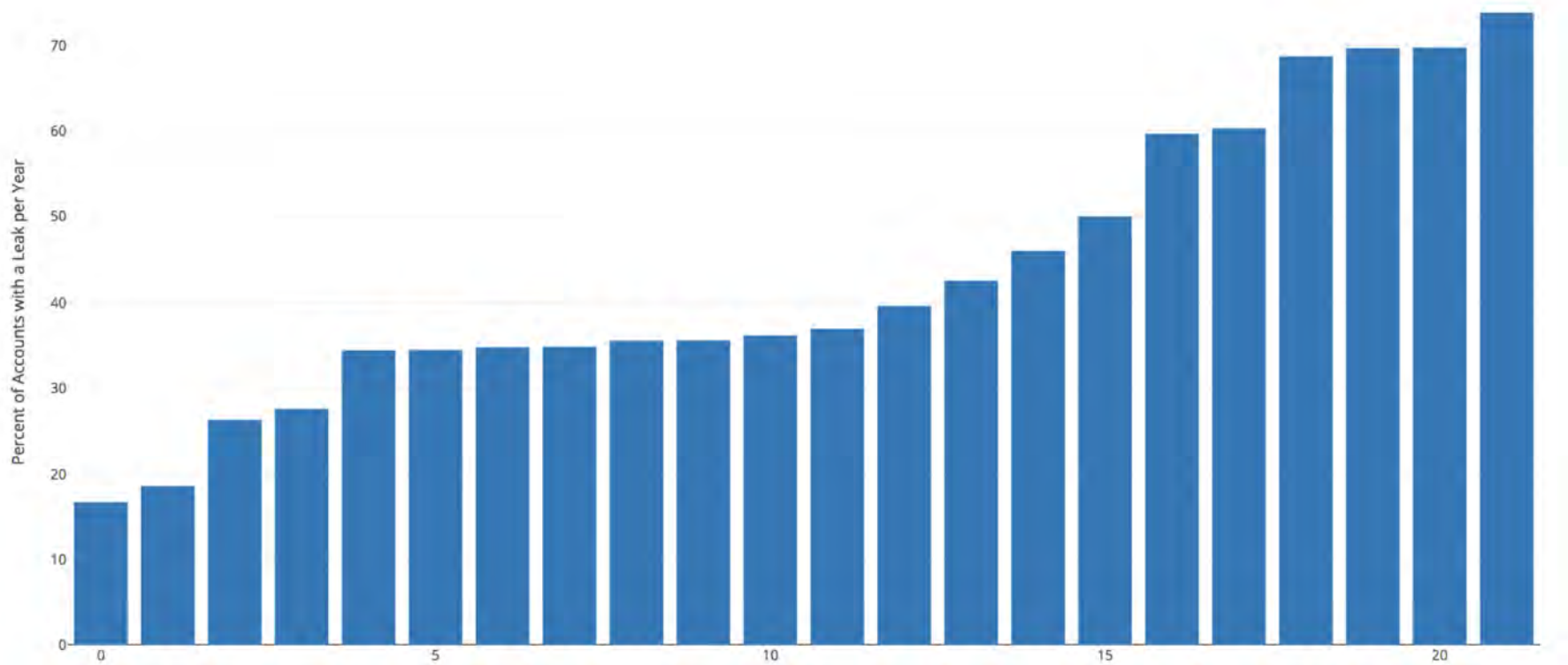
POPULATION:
165,000

ACCOUNTS SERVED:
55,000

INCREASE IN EVENT ATTENDANCE:
50%

Getting customers online early reduces strain later

22 Utilities - 467K Accounts - 386K Leaks - 43% Average Percent of Accounts with a Leak per Year



Summary

Start to digitize customers early:

1. Improve customer service now
2. Get customers online
3. Prepare customers for AMI
4. Avoids data overload for staff

KEYS TO SUCCESS

- Measurable results
- Actionable insights
- Fantastic user experience
- Deep water expertise
- World-class customer service



CRESCENTA VALLEY WATER DISTRICT

STAFF REPORT

Information Item No. 2
August 9, 2018

To: Engineering Committee
From: David S. Gould, P.E. – District Engineer
Subject: Groundwater Modeling and Evaluation for Potential of MTBE Recurrence in the Verdugo Basin, Project M-995

INFORMATION ITEM:

Discussion on Proposal for Groundwater Modeling and Evaluation for Potential of MTBE Recurrence in the Verdugo Basin, Project M-995

BACKGROUND:

Methyl Tert-Butyl Ether (MTBE) was first detected in CVWD's wells in 2004. MTBE levels increased in 2006, which resulted in Well 5 & 7 being taken out of service for an extended period of time. MTBE levels have decreased to non-detect levels over the last 5 years, at the same time, rainfall in the Crescenta Valley have been at least 40%-50% below average. The less than average rainfall has resulted in the groundwater levels dropping about 20 to 30 feet lower normal. With low groundwater levels, the vadose zone or unsaturated zone, which is the area from the finish surface to the top of the well levels, has increased and it is possible that MTBE is still trapped in the upper layers of the soil.

Staff and Board of Directors have discussed on a number of occasions, if MTBE levels would increase in the future; what would be the treatment process and financial costs if additional groundwater wells were taken out of service due to MTBE.

DISCUSSION:

Staff looked into how it could answer the questions if MTBE was still within the soil, if water levels rose, would MTBE re-appear in the wells, and where MTBE would go within the basin. Once these questions have been answered, then staff could begin looking at possible treatment processes and financial costs if additional groundwater wells were taken out of service due to MTBE.

Staff met with Mr. Greg Hamer from Wood Environmental & Infrastructure Solutions (formerly AMEC Foster Wheeler), who's firm prepared the groundwater modeling in 2005 as part of the Verdugo Basin Groundwater Recharge and Conjunctive Use Feasibility Study about preparing a study to update the groundwater model and performing a particle tracer study using the groundwater model to evaluate the potential for MTBE reoccurring based on studies, water level data and geological information that has become available over the last 10 years

Scope of Work

Mr. Hamer prepared a scope of work (See attached) that included the following:

1. Review existing documents and data provided by:
 - a. Regional Water Quality Control Board (RWQCB) - GeoTracker website.
 - b. California Department of Toxic Substances Control (DTSC) - Envirostor website.
 - c. Reports, documents and data available from CVWD.
2. Estimate MTBE Mass in Vadose Zone Soils
 - a. Prepare a groundwater contour map based on spring-summer 2018 well level conditions.
 - b. Determine the bottom limits of the vadose zone that will be used for estimating the mass of MTBE remaining.
 - c. Prepare maps showing the estimated MTBE mass at various depths in the vadose zone.
 - d. Estimate the location and approximate mass of MTBE potentially available to impact groundwater as water levels increase in the Basin.

- e. Estimate the maximum water level increase and estimate the total mass potentially released due to water level fluctuations.
3. Technical Memorandum: Occurrence of MTBE in Verdugo Basin with the following:
 - a. A summary of known MTBE occurrences in the Basin and remedial work performed.
 - b. A summary of potential for residual MTBE to be present in underlying vadose zone soils.
 - c. Estimated mass of MTBE in the vadose zone in various depth intervals.
 - d. Historical occurrence of MTBE in monitoring wells and CVWD production wells.
4. Research MTBE Releases from Vadose Zone Soils
 - a. Research available literature for examples of conditions where rising groundwater levels have resulted in the release of MTBE to groundwater.
 - b. Review the decay rate of MTBE and MTBE-degradation products in the vadose zone and groundwater over time.
5. Update the Verdugo Basin Groundwater Flow Model
 - a. 2005 groundwater model will be updated to evaluate possible movement of MTBE in groundwater in the Basin and possible impacts to CVWD wells.
 - b. Evaluate groundwater flow paths and flow rates by using particle-tracking simulations.
 - c. Groundwater model simulations would be run for various Basin conditions including simulate groundwater flow paths where MTBE may transfer from vadose zone soils into groundwater.
6. Groundwater Model Simulations
 - a. Run up to 10 simulations using the updated groundwater model with particle-tracking scenarios and various amounts of water level rise above current conditions and various CVWD pumping scenarios
7. Technical Memorandum: Potential for MTBE Releases to Groundwater
 - a. Summarizing the work performed and providing information to CVWD regarding the potential for MTBE to be released from the vadose zone and impact CVWD production wells during less than average rainfall years, average rainfall years and several above average rainfall years.

Preliminary Project Schedule:

Task	Date
Presentation to Engineering Committee	August 9, 2018
Board Meeting - Award of Contract	August 14, 2018
Kickoff Meeting	August 27, 2018
Complete Data Request	September 28, 2018
Technical Memo - Occurrence of MTBE in Verdugo Basin	November 30, 2018
Technical Memo - Potential for MTBE Releases to Groundwater	February 1, 2019
Presentation to Board of Directors	February 12, 2019

Project Funding:

The cost for the groundwater modeling and evaluation for potential of MTBE recurrence in the Verdugo Basin study as shown in Mr. Hamer's proposal is \$115,215, which can be funded from the MTBE reserve fund.

RECOMMENDATION:

Staff has reviewed the proposal and is is staff's recommendation to the Engineering Committee to proceed with the evaluation study. The proposed evaluation study will assist in answering the question about the possibility of MTBE returning to the Basin. The evaluation study will also be the basis for staff to analysis the estimated cost for wellhead treatment or purchasing additional imported water into the future.

Prepared & Submitted by:



David S. Gould, P.E.
District Engineer

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USA

T: 949-642-0245

www.woodplc.com

July 20, 2018
2018IRV030

Mr. David Gould, PE
Crescenta Valley Water District
2700 Foothill Blvd
La Crescenta, CA 91214

Subject: **Proposal to Evaluate Potential MTBE Recurrence**

Dear Mr. Gould,

At your request, this letter presents a scope of work and estimated budget for evaluation of conditions in the Verdugo Basin (Basin) related to the occurrence of methyl tertiary butyl ether (MTBE) in vadose zone soils and groundwater. Wood Environment and Infrastructure Solutions, Inc. (Wood) understands that Crescenta Valley Water District (CVWD) is concerned that rising future groundwater levels in the Basin could release MTBE that may be present in vadose zone soils beneath and in the vicinity of gasoline service station sites in the Basin. The service station sites are upgradient of CVWD's groundwater production wells and if MTBE were released to groundwater, CVWD's production wells could be adversely impacted.

MTBE is not currently found at concentrations above the California State Water Resources Control Board Maximum Contaminant Level (MCL) for drinking water in groundwater produced from CVWD's wells. Previously, however, CVWD shut down several production wells when MTBE was present at concentrations above the MCL in produced groundwater. If MTBE at concentrations above the MCL were to occur in production water from CVWD wells in the future, the affected wells may need to be taken out of service resulting in significant impact on CVWD's operations. With this in mind, CVWD requested that Wood evaluate MTBE-related conditions in the Basin and support CVWD in developing a response plan if future well shutdowns were required.

Scope of Work

The scope of work has been divided into several tasks, described in the following paragraphs.

Task 1: Review Existing Documents and Data

For this task, we will review various gas station remediation reports, reports available on the Regional Water Quality Control Board (RWQCB) GeoTracker website, and on the California Department of Toxic Substances Control (DTSC) Envirostor website, and records available from CVWD. Our review will focus on developing an understanding of:

- Historical known and potential sources of MTBE in the Basin,
- Remediation performed and ongoing at known hydrocarbon release sites in the Basin,
- History of MTBE-impacted groundwater in CVWD extraction and monitoring wells.

We assume that the following will be available from CVWD:

- remediation reports and other documents related to the various gas station remediation locations in the Basin,
- pertinent documents from CVWD's MTBE litigation, including reports by Stephen Wheatcraft and Kevin Berryhill,



- CVWD pumping records, MTBE analyses results, and information related to CVWD's previous well shutdowns related to MTBE,
- CVWD's 2011 MTBE blending calculations and more-recent similar work by CVWD.

Plate 1 shows the locations of underground tank sites in the upper part of the Verdugo Basin generally upgradient of CVWD's production wells¹. Based on our previous work in the Basin there are approximately ten existing or former gas station sites and approximately a dozen other sites that may previously or currently store gasoline in underground storage tanks. The results of this task, along with Task 2 work, will be used for Task 3: Technical Memorandum on the Occurrence of MTBE in the Basin.

Task 2: Estimate MTBE Mass in Vadose Zone Soils

Using the data collected for Task 1, to the degree possible, we will estimate the mass of MTBE in vadose zone soils in the Basin. Because the water table in the Basin marks the bottom of the vadose zone, our first step for this task will be to use available groundwater level data to prepare a groundwater contour map for spring-summer 2018 conditions in the Basin. We assume that water level data for wells in the Basin will be available from CVWD. We will use the spring-summer 2018 conditions as the base of the vadose zone for estimating the mass of MTBE that may currently be present in the vadose zone.

We assume that for gas station sites in the Basin there are available MTBE soil sampling results. If soil sampling results for MTBE are very sparse or only available for a few of the gasoline station sites, we will discuss the data with CVWD to agree on an estimating approach before proceeding with the remainder of this task. We will prepare maps showing the estimated MTBE mass at various depths in the vadose zone at the gasoline station sites. These maps will be used to estimate the location and approximate mass of MTBE potentially available to impact groundwater as water levels increase in the Basin. We will also estimate the maximum water level increase at the gas station sites and combine this with the mass distribution of MTBE in soil to estimate the total mass potentially released due to water level fluctuations.

Task 3: Technical Memorandum: Occurrence of MTBE in Verdugo Basin

Based on the results of Tasks 1 and 2, we will prepare a Technical Memorandum summarizing the occurrence of MTBE in the Basin upgradient of, and in the vicinity of CVWD's production wells. The Technical Memorandum will include:

- A summary of known MTBE occurrences at environmental sites in the Basin, including remedial work performed.
- A summary of the potential for residual MTBE to be present in underlying vadose zone soils.
- Estimated mass of MTBE in the vadose zone in various depth intervals (from Task 2), and
- Historical occurrence of MTBE in monitoring wells and CVWD production wells in the Basin.

Task 4: Research MTBE Releases from Vadose Zone Soils

For this task, we will research available literature for examples of conditions where rising groundwater levels have resulted in the release of MTBE to groundwater. We will use the results of the research to evaluate the potential for MTBE to be released from vadose zone soils in the Basin as a result of increases in the groundwater levels. Important considerations will be the mass of MTBE that may be in the soil, soil types and layering, and the rate and degree of rises in groundwater levels. This task will also review the decay rate of MTBE and MTBE-degradation products in the vadose zone and groundwater over time. The potential for releases to groundwater will be incorporated into the groundwater flow scenarios modeled in Task 6.

Task 5: Update Groundwater Flow Model

The Basin groundwater flow model, developed in 2005², will be updated so that it can be used to evaluate possible movement of MTBE in groundwater in the Basin and possible impacts to CVWD pumping wells. The Basin groundwater flow model was not designed for evaluating groundwater contaminant transport, and modification of the model for that purpose

¹ Plate 1 was prepared in 2006 as part of Wood's (formerly Geomatrix Consultants, Inc.) support to CVWD related to MTBE in the Verdugo Basin. This figure will be updated based on Task 1 work.

² The groundwater flow model for the Verdugo Basin was developed as part of the Verdugo Basin Groundwater Recharge and Conjunctive Use Feasibility Study (CVWD Project E-713), prepared by Wood (legacy Geomatrix Consultants, Inc.), report dated May 2005.



would require an extensive amount of work. The Basin groundwater flow model, however, can be used to evaluate groundwater flow paths and flow rates by using particle-tracking simulations. Groundwater model simulations would be run for various Basin conditions and would include the introduction of particles to the model to simulate groundwater flow paths from environmental sites where MTBE may transfer from vadose zone soils into groundwater.

The groundwater flow model will be updated with data provided by CVWD, including CVWD pumping and water level data through June 2018. The model will be re-calibrated based on the updated information. Once the model is fully calibrated, it will be ready for use in Task 6 to evaluate MTBE scenarios. Additionally, the model would then be available for additional future model runs (not included in this scope of work) to evaluate various pumping scenarios, artificial recharge at Crescenta Valley County Park, or other conditions that CVWD would like to evaluate.

Task 6: Model Simulations

The updated groundwater flow model will be used for particle-tracking scenarios to evaluate possible movement of MTBE in groundwater from environmental sites where residual MTBE is thought to be present in vadose zone soils. The number of particles introduced into the model for simulations will depend on the amount of MTBE that is thought to be present in specific areas in the Basin. For this task up to 10 simulations will be run including various amounts of water level rise above current conditions and various CVWD pumping scenarios.

We anticipate that this task will be iterative, with CVWD input prior to running model scenarios. We will develop a list of possible model scenarios and discuss it with CVWD and agree on which scenarios should be run first. As scenarios are completed we will discuss our findings with CVWD and agree on the configuration of remaining model scenarios to be run.

Task 7: Technical Memorandum: Potential for MTBE Releases to Groundwater

For this task, we will prepare a Technical Memorandum summarizing the work performed and providing information to CVWD regarding the potential for MTBE to be released from the vadose zone and impact CVWD production wells. Possible future conditions to be considered include:

- less than average rainfall years,
- average rainfall years, and
- A period of several above-average rainfall years.

Optional Tasks

Based on our work in the Basin and discussions with CVWD, additional work to further refine the groundwater flow model is presented herein as optional tasks. This work includes additional evaluation of available geologic and hydrogeologic data for the basin and collection of additional field data to refine the model parameters. Optional tasks are:

Optional Task 8: Additional evaluation of hydrogeologic data for CVC Park area. CVWD is considering artificial recharge of surface and stormwater flows at CVC Park. Refining the groundwater flow model for that area will help in understanding conditions there and in modeling the effects of groundwater recharge.

Geophysical and boring data are available for the CVC Park area and these data will be reviewed to better understand the occurrence of faults in the area and the possible presence of older and younger alluvial units that may have significantly different permeabilities. Permeability differences at depth will affect the recharge and movement of groundwater in the vicinity of the park and CVWD's nearby groundwater pumping wells. Additionally, the presence of faults in the area can affect groundwater movement. If locations of the faults in the area can be better identified, this information can be incorporated into the groundwater flow model as part of the Task 5 groundwater flow model update.

Optional Task 9: Pumping tests for aquifer parameters. Understanding of the groundwater flow conditions in the area of CVWD's pumping wells can be improved by collecting more data on the aquifer parameters in the area near the pumping wells. This area includes CVC Park and in 2016, CVWD installed two new groundwater monitoring wells there (MW16 and MW17). Pumping tests performed in these two wells would provide data for calculating the aquifer properties in the area. The



pump tests can provide data on the hydraulic conductivity of the aquifer in the area and the presence or absence of barriers to groundwater flow or recharge of the aquifer from flow in nearby Verdugo Wash.

Each pump test would include installation of a test pump, pumping for 2 to 4 hours at various pumping rates to evaluate a suitable pumping rate for constant-rate pumping, and pumping of the well at a constant rate for approximately eight hours. Water level drawdown and recovery would be measured in the pumping well and in the nearest CVWD monitoring well.

We will work with CVWD prior to the pump tests to determine where pumped water should be discharged. Possible discharge options include the storm drain system/Verdugo Wash or Dunsmuir Channel, the sanitary sewer system, or hauling and disposal. As part of this task, we will work with CVWD to obtain the necessary discharge permits. Regardless of the discharge option, water will first be pumped into a 20,000-gallon Baker tank prior to discharge. This will allow the water quality to be tested, if necessary, prior to discharge.

Data from the two pumping tests will be used to calculate the hydraulic conductivity of the alluvial aquifer in the vicinity of the pumped wells. Hydraulic conductivity values will be input into the groundwater flow model as part of the model update.

Estimated Cost and Contracting

We anticipate that the work described herein will be performed under our existing contract terms with CVWD and rates presented in Attachment 1 to this scope of work. The work will be performed on a time-and-materials basis. Table 1 presents the estimated cost for the proposed work. The estimated not-to-exceed cost is \$115,215 not including the two optional tasks. The estimated cost for the two optional tasks are \$43,020. Additional detail regarding estimated hours and costs for each task is presented in Attachment A.

If during the course of the work described herein we anticipate a change in the scope of work and anticipated costs for the work, we will notify CVWD promptly to discuss the anticipated changes.

Schedule

We can start work on the project within two weeks of authorization. Depending on the availability of data from CVWD, we anticipate the following schedule for deliverables:

- Task 3: Technical Memorandum: Occurrence of MTBE in Verdugo Basin- eight weeks after project start
- Task 7: Technical Memorandum: Potential for MTBE Releases to Groundwater- 18 weeks after project start

At the outset of the project we will refine the schedule for deliverables based on the availability of data from CVWD and inclusion or omission of one or more optional tasks.



Closure

We appreciate the opportunity to provide this scope and cost estimate for continued work towards better understanding groundwater conditions in the Verdugo Basin that will help CVWD improve water system reliability and help reduce overall costs for CVWD.

Sincerely,

Wood Environment & Infrastructure Solutions, Inc.

Reviewed by:



Greg Hamer, PG, CHG
Principal Hydrogeologist



James J. Weaver
Area Manager and Principal Engineer

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(Submitted Electronically)

Attachment: Table 1: Estimated Cost
Plate 1: Active Pumping Wells, Monitoring Wells, and Known UST Sites in the CVWD Area
Attachment A (Tables A and B): Additional Cost Estimate Detail



Table 1

Estimated Cost

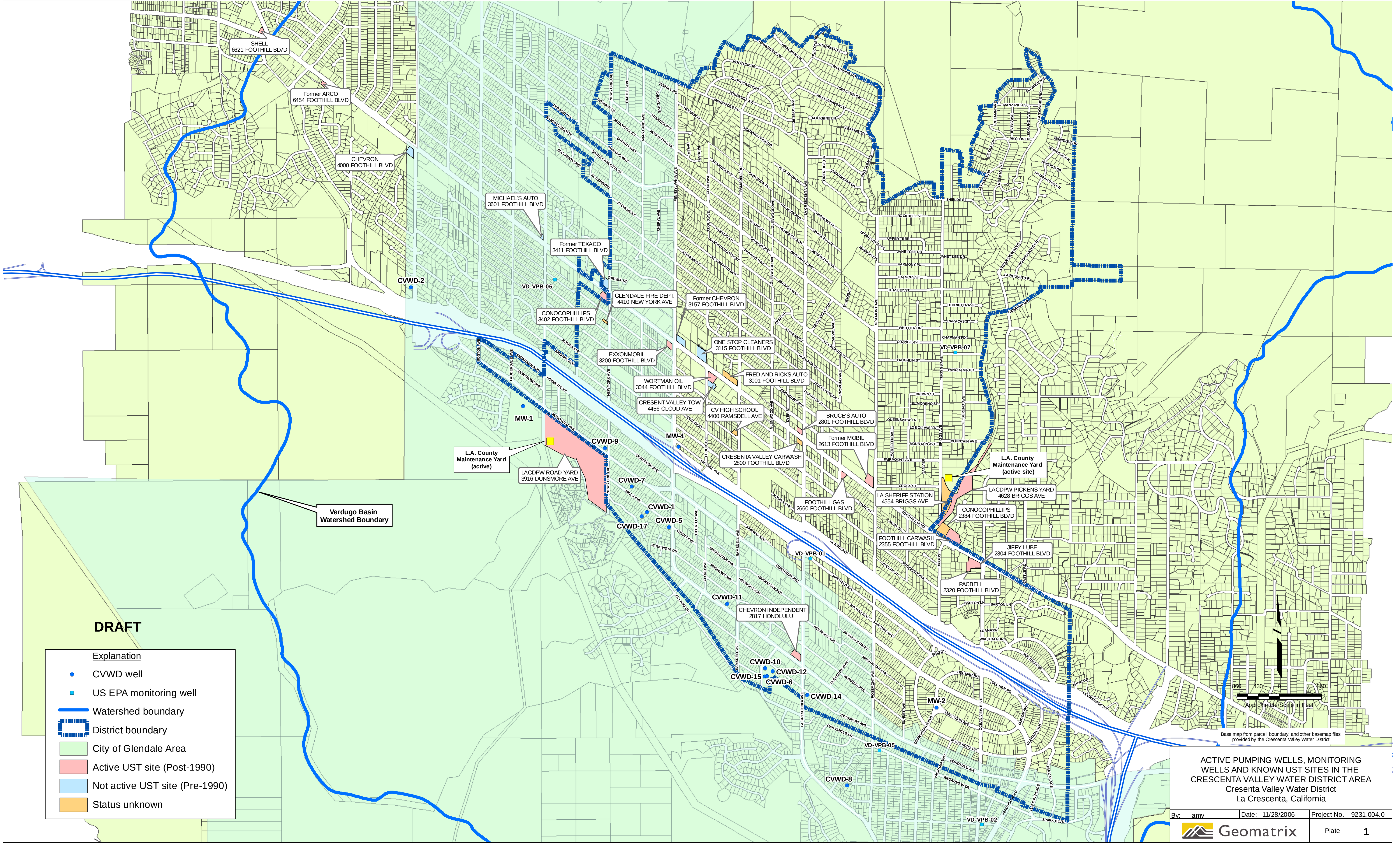
Table 1
Estimated Costs

Task Name	Labor Hours	Cost
Task 1: Review Existing Data	100	\$14,440
Task 2: Estimate MTBE Mass in Vadose Zone Soils	109	\$15,495
Task 3: Technical Memorandum: Occurrence of MTBE in Verdugo Basin	41	\$6,430
Task 4: Research MTBE Releases from Vadose Zone Soils	23	\$3,460
Task 5: Update Groundwater Flow Model	156	\$30,010
Task 6: Model Simulations	190	\$34,840
Task 7: Technical Memorandum: Potential for MTBE Releases to Groundwater	67	\$10,540
Total Estimated Cost	686	\$115,215
Optional Tasks	Labor Hours	Cost
Optional Task 8: Additional Evaluation of Hydrogeologic Data	92	\$14,010
Optional Task 9: Pumping Tests for Aquifer Parameters	81	\$29,010
Total Estimated Cost – Optional Tasks	173	\$43,020

Plate 1

**Active Pumping Wells, Monitoring Wells,
and Known UST Sites in the CVWD Area**







Attachment A (Tables A and B)

Additional Cost Estimate Detail

Table A
Estimated Level of Effort - Estimated Labor Hours
Crescenta Valley Water District
MTBE Evaluation

Project Task Description	Project Level of Effort, in Person-hours								
	Principal	Senior Associate	Associate Engineer/ Hydro-geologist	Senior II Engineer/ Hydro-geologist	Senior I Engineer/ Hydro-geologist	Technical Professional Engineer/ Hydro-geologist	Graphics/ Drafting/ Technician	Admin/ Clerical Support	TOTAL HOURS BY TASK OR SUBTASK
EVALUATION OF POTENTIAL MTBE RECURRENCE									
Task 1: Review Existing Data	4	14	0	0	0	70	8	4	100
Task 2: Estimate MTBE Mass in Vadose Zone Soils	3	16	4	0	0	60	24	2	109
Task 3: Technical Memorandum: Occurrence of MTBE in Verdugo Basin	2	10	4	0	0	20	4	1	41
Task 4: Research MTBE Releases from Vadose Zone Soils	2	4	0	0	0	16	0	1	23
Task 5: Update Groundwater Flow Model	48	86	0		0	0	20	2	156
Task 6: Model Simulations	48	100	0	0	0	0	40	2	190
Task 7: Technical Memorandum: Potential for MTBE Releases to Groundwater	6	16	5	0	0	30	8	2	67
TOTAL ESTIMATED LABOR HOURS:	113	246	13	0	0	196	104	14	686
Optional Task 8: Additional Evaluation of Hydrogeologic Data	6	20	4	0	0	48	12	2	92
Optional Task 9: Pumping Tests for Aquifer Parameters	4	2	0	0	0	70	3	2	81
TOTAL ESTIMATED LABOR HOURS- Optional Tasks:	10	22	4	0	0	118	15	4	173

Notes

See assumptions with Table B- Estimated Cost sheet

Table B
Estimated Costs
Crescenta Valley Water District
MTBE Evaluation

Project Task Description	Project Level of Effort, as Cost								COST TOTALS		
	Principal	Senior Associate	Associate Engineer/ Hydrogeologist	Senior II Engineer/ Hydrogeologist	Senior I Engineer/ Hydrogeologist	Technical Professional Engineer/ Hydrogeologist	Graphics/ Drafting/ Technician	Admin/ Clerical Support	TOTAL LABOR COST BY TASK	OTHER DIRECT COSTS	TASK COSTS SUBTOTAL
Hourly Rate	\$225	\$195	\$180	\$175	\$155	\$135	\$110	\$70			
EVALUATION OF POTENTIAL MTBE RECURRENCE											
Task 1: Review Existing Data	\$ 900	\$ 2,730	\$ -	\$ -	\$ -	\$ 9,450	\$ 880	\$ 280	\$ 14,240	\$ 200	\$14,440
Task 2: Estimate MTBE Mass in Vadose Zone Soils	\$ 675	\$ 3,120	\$ 720	\$ -	\$ -	\$ 8,100	\$ 2,640	\$ 140	\$ 15,395	\$ 100	\$15,495
Task 3: Technical Memorandum: Occurrence of MTBE in Verdugo Basin	\$ 450	\$ 1,950	\$ 720	\$ -	\$ -	\$ 2,700	\$ 440	\$ 70	\$ 6,330	\$ 100	\$6,430
Task 4: Research MTBE Releases from Vadose Zone Soils	\$ 450	\$ 780	\$ -	\$ -	\$ -	\$ 2,160	\$ -	\$ 70	\$ 3,460	\$ -	\$ 3,460
Task 5: Update Groundwater Flow Model	\$ 10,800	\$ 16,770	\$ -	\$ -	\$ -	\$ -	\$ 2,200	\$ 140	\$ 29,910	\$ 100	\$30,010
Task 6: Model Simulations	\$ 10,800	\$ 19,500	\$ -	\$ -	\$ -	\$ -	\$ 4,400	\$ 140	\$ 34,840	\$ -	\$34,840
Task 7: Technical Memorandum: Potential for MTBE Releases to Groundwater	\$ 1,350	\$ 3,120	\$ 900	\$ -	\$ -	\$ 4,050	\$ 880	\$ 140	\$ 10,440	\$ 100	\$10,540
TOTAL ESTIMATED COST									\$114,615	\$600	\$115,215
Optional Task 8: Additional Evaluation of Hydrogeologic Data	\$ 1,350	\$ 3,900	\$ 720	\$ -	\$ -	\$ 6,480	\$ 1,320	\$ 140	\$ 13,910	\$100	\$14,010
Optional Task 9: Pumping Tests for Aquifer Parameters	\$ 900	\$ 390	\$ -	\$ -	\$ -	\$ 9,450	\$ 330	\$ 140	\$ 11,210	\$17,800	\$29,010
TOTAL ESTIMATED COST-Optional Tasks	\$ 2,250	\$ 4,290	\$ 720	\$ -	\$ -	\$ 15,930	\$ 1,650	\$ 280	\$ 25,120	\$ 17,900	\$ 43,020

Table B
Estimated Costs
Crescenta Valley Water District
MTBE Evaluation

ASSUMPTIONS	
Task 1: Review Existing Data	One project kickoff meeting to start project, discuss approach and goals, and to receive data/reports (if possible) from CVWD.
Task 2: Estimate MTBE Mass in Vadose Zone Soils	Ability to estimate MTBE mass depends on the availability of MTBE test results for soils beneath and near gas-station sites in the Basin. Data are expected to vary considerable for the 28 gas station sites currently and formally in the Basin. Mass estimates will not include a map of the geometry of the MTBE plume in vadose soils.For remediated sites, post-remediation MTBE sample analyses results will be needed for calculations. After initial review of data, Wood staff to discuss estimating approach with CVWD before proceeding with calculations of mass and preparation of figures.
Task 3: Technical Memorandum: Occurrence of MTBE in Verdugo Basin	Provide one draft version to CVWD to review, incorporate CVWD edits and finalize report. Provide PDF copy and 4 hard copies.
Task 4: Research MTBE Releases from Vadose Zone Soils	
Task 5: Update Groundwater Flow Model	Update model from Dec 2015 to June 2018 with available monthly CVWD production, precipitation, mountain front recharge, stream discharges, and groundwater level observations. Quantitively recalibrate model from Jun 1981 to Jun 2017 to observed groundwater levels and stream discharges. Add MTBE source terms at suspected release areas and run MT3DMS transport model. Qualitatively calibrate MTBE migration by modifying source terms and decay rates.
Task 6: Model Simulations	Maximum of 10 model simulation runs. Three conference calls with CVWD to discuss scenario results
Task 7: Technical Memorandum: Potential for MTBE Releases to Groundwater	Provide one draft version to CVWD to review, incorporate CVWD edits and finalize report. Provide PDF copy and 4 hard copies.
Optional Task 8: Additional Evaluation of Hydrogeologic Data	Most of the data to be reviewed has already been assembled as part of the CVWD CVC Park Stormwater Recharge Planning project.
Optional Task 9: Pumping Tests for Aquifer Parameters	Assumptions for this task are: Mob, install pump, and pump 2-3 hrs. from well MW16 to set pumping rate for first test (day 1) Pump 8 hrs. (day 2) Install pump in well MW17 pump 2-3 hrs (day 3) . Pump 8 hrs. (day 4) Demob (day 5) Other direct costs include field travel, water level sounder, drilling subcontractor to supply and install and operate pump system including electric generator. Baker tank rental not included. Depending on timing of pumping test implementation, an updated drilling subcontractor estimate may be needed for providing, installing, operating, and removing pumps in the two wells.

**WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC. (WOOD)
RATE SCHEDULE**

The hourly labor rates set forth below are valid from January 1, 2018, and are subject to 3% annual escalation thereafter.

PROFESSIONAL SERVICES

CLIENT agrees to reimburse Wood for all hours worked by professionals at the following classifications and associated hourly labor rates. For expert witness testimony and related services in connection with litigation, CLIENT agrees to reimburse Wood for all hours worked by professionals at the following classifications, but at one and one-half times the associated hourly labor rates.

<u>CLASSIFICATION</u>	<u>RATE/HOUR</u>
Principal	\$225
Senior Associate	\$195
Associate	\$180
Senior 2	\$175
Senior 1	\$155
Technical Professional	\$135
CADD/GIS	\$110

TECHNICIAN SERVICES

CLIENT agrees to reimburse Wood for all hours worked by technicians at the following classifications and associated hourly labor rates.

<u>CLASSIFICATION</u>	<u>RATE/HOUR</u>
Senior Technician	\$110
Technician	\$110

ADMINISTRATIVE SERVICES

CLIENT agrees to reimburse Wood for all hours worked by project administrative staff at the following classifications and associated hourly labor rates.

<u>CLASSIFICATION</u>	<u>RATE/HOUR</u>
Administrative Staff	\$70
Project Assistant	\$70

MISCELLANEOUS EXPENSES

ESCALATION: CLIENT agrees that hourly labor rates will be escalated 3% annually.

OTHER DIRECT EXPENSES

CLIENT agrees to reimburse Wood for all other direct expenses incurred at the following rates, except as otherwise specified by Wood in its proposal:

Travel Expenses: Transportation (mileage, air travel, car rental, etc.), lodging, meals, & incidental expenses	Cost plus 5%
Subcontract Expenses: Supplies or services furnished to Wood in support of project activities by any supplier or firm, except temporary agency or consultant staff charged at above hourly rates	Cost plus 5%
Direct Expenses: Other expenses in support of project activities	Cost plus 5%
Unit Pricing: Any unit pricing work, such as laboratory analysis, in-house equipment rental, etc. will be quoted separately	

CRESCENTA VALLEY WATER DISTRICT

STAFF REPORT

Information Item No. 3
August 9, 2018

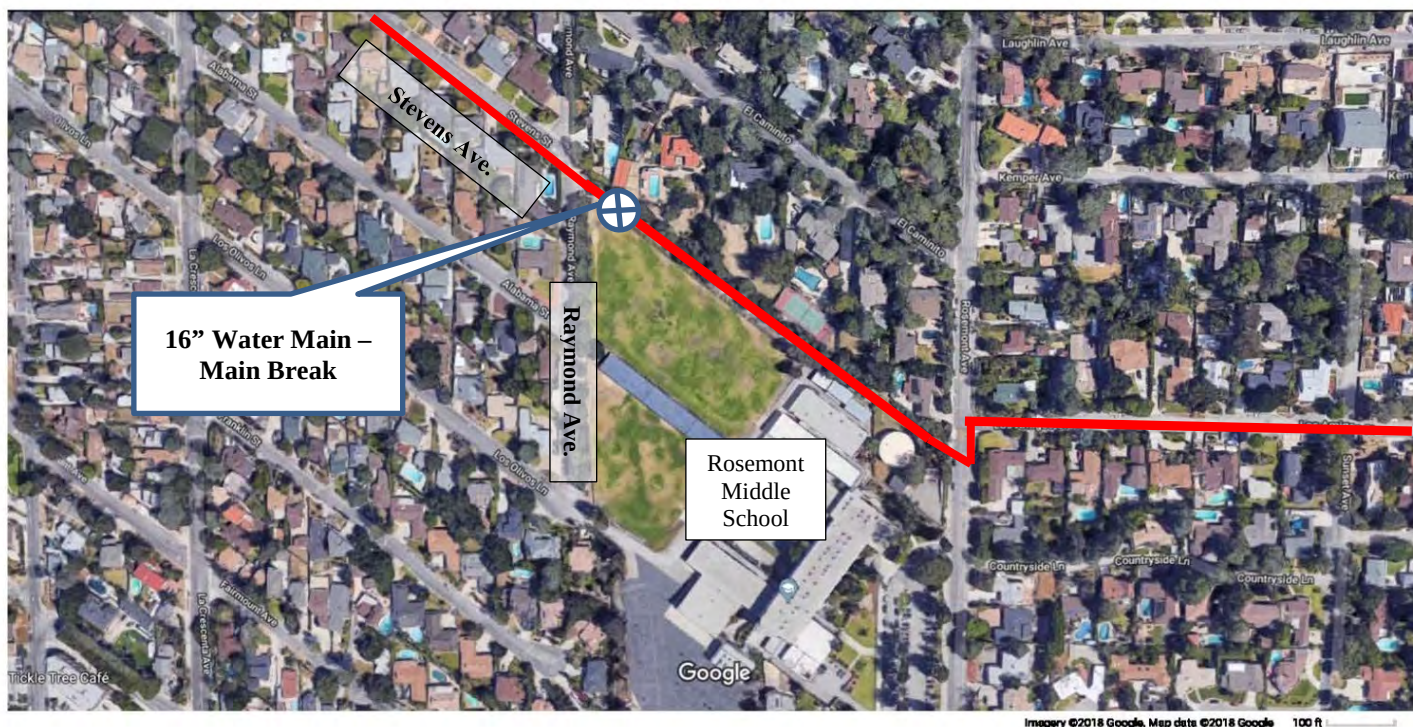
To: Engineering Committee
From: David S. Gould, P.E. – District Engineer
Subject: Discussion of 16-inch Water Main Break at Raymond & Stevens

INFORMATION ITEM:

Discussion of 16-inch Water Main Break at Raymond & Stevens from 7/28/18 to 7/30/18

BACKGROUND:

CVWD operates a 16-inch steel water main that starts at the Paschall Booster Station on Briggs and heads westerly towards Oak Creek Reservoir. A portion of the water main is in a sloped easement located between the field for Rosemont Middle School and the back of the properties along El Caminito Street (see attached location map). The 16-inch water line is a transmission main that brings water from Zone 2 and imported water to Zones 3 & 4. The water travels to Oak Creek Reservoir, where it is distributed to CVWD's upper zones (Zone 5 through 11).



DISCUSSION:

The following is a summary of events that occurred from Saturday, July 28, 2018 through Monday, July 30, 2018. Staff met on August 1, 2018 to discuss the main break and lessons learned from the event, which are shown below.

Saturday - 7/28/18 – 5:00 PM

Standby person (Jaysen Ortega) received a call from Henkels and McCoy, sub-contractor for SCE, regarding damage caused to CVWD's 16-inch water main when drilling for a new power pole guide wire behind 4848 Raymond Ave.. Henkels and McCoy work order # ELCS17-11647; Structure # 1661749E; Supervisor Craig N. (909) 203-3710.

- Jaysen contacted Dennis Maxwell & Bryan Jones
- Dennis & Bryan met with Craig N. from Henkel and McCoy at site. Asked about Underground Service Alert (USA) notification. Unclear from Henkel and McCoy if area where they dug was included in USA notification. Henkel and McCoy left the site. To be researched further after water main is repaired
- Dennis & Bryan assessed the water main break
 - o Bryan called personnel to assemble a field crew
 - o Bryan called Southern California Gas Company to locate underground lines
 - U.S.A. does not come out on weekends
 - o Dennis called System Operators
 - Standby Operator - Kellen Boyce – Left Message
 - Dave Spain – Left Message
 - Morgen DuRose – Returned call
 - Raymond Dodge – Responded to phone call
 - o Crew Assembled
 - Wayne Boyce
 - Siaki Mortenson
 - Jaysen Ortega
 - Kellen Boyce
 - Raymond Dodge

Lesson Learned:

1. Not able to contact Standby Operator. Sent email, text, called cell phone & home phone
 - Upgrade AT&T signal at Kellen's home. Also upgrade at David Inman's home
 - o **ACTION ITEM:** Mark & Dennis to investigate and report back on equipment and labor cost to upgrade AT&T signal.
2. CVWD contact list not up-to-date
 - Update CVWD Cell Phone & Home Phone list
 - o **ACTION ITEM:** Wendy Holloway to update CVWD phone list and distribute to all personnel
 - o **ACTION ITEM:** Wendy to make a wallet size list and laminate for all personnel.
 - Update Outlook Contact List
 - o **ACTION ITEM:** All personnel with access to Outlook on their phone will update their contact list with CVWD phone list
 - Other Emergency Contact List:
 - o **ACTION ITEM:** Dennis to talk with System Operators and Standby Personnel to get emergency contact list of important people to contact in case they cannot be reached.

Saturday - 7/28/18 - 6:00 PM – 9:00 PM

1. Prepared for shutdown of 16-inch water main
 - o Turned off Booster Pumps by Raymond via SCADA
 - o Booster pumps A, B & C at Ocean View turned off
 - o Booster pump 23 at Rosemont turned off
 - o Booster pumps A & B at Mills Plant along with pumps for Wells 1, 7 & 9 turned off
 - o Booster pumps A & B at Paschall turned off
2. Contacted FMWD to shutdown imported water flow to Paschall and Ocean View

3. Bryan and crew brought equipment to site and worked to access the main break area
 - Access to easement area and Rosemont Middle School field from Raymond Ave.
 - Set up Light Stand
 - Used small backhoe to make a roadway
 - Removed shrubs & tree limbs
 - Brought base material to site
 - Graded roadway into sloped easement area
 - Used base material to make roadway
 - Crews held an impromptu birthday party for Wayne.
 - Found a meter box & lateral going to 4848 Raymond; Dennis spoke to owner
4. Gas Company arrived at site around 9:00PM to mark underground gas lines.
5. Started work to close isolation valves – east and west of main break.
 - East side of main break - Isolated water coming into Zone 4 from Paschall Booster Pumps & Zone 2 to Oak Creek Reservoir
 - o 12-inch valves (V22-53 & V22-54) at Rosemont and Los Amigos - Closed
 - o Isolated Rosemont Reservoir from inlet water - Paschall Booster Pumps & Zone 2
 - West side of main break - Isolate water from Oak Creek Reservoir into Zone 4
 - o 16-inch Valve (V16-109) & 4-inch bypass valve (V16-44) at Raymond & Stevens – **Did Not Close**
 - o Expanded shutdown to next 16-inch Valve
 - o 16-inch Valve (V16-110) & 4-inch bypass valve (V16-29) at La Crescenta & Stevens – **Did Not Close**
6. Customer Calls – Started to receive calls from customers regarding water flowing in the street near Ralph's shopping center. Received about 25 – 30 messages
7. Nem informed the Board of a 16-inch water main break
8. Dennis and Bryan discussed getting materials ready for repair of pipeline

Lesson Learned:

1. Need to Contact LA County Fire Department – Station 63 & LA County Sheriff Station
 - **ACTION ITEM:** Dennis to add to notification list
2. Customer Calls to Stand By phone and Main Office
 - Suggestion to make a separate phone message that can be programmed to use during an emergency so customers can be informed that CVWD is aware of the situation.
 - o **ACTION ITEM:** Mark to research how to record separate messages that can be used for the stand by phone and the main office phone system.
3. Informing Community via website and social media
 - **ACTION ITEM:** Nem to set up meeting with CV Strategies about use of Social Media to inform the community
4. Materials for repair – Need to check inventory for repair clamps, couplings and pipe
 - **ACTION ITEM:** Bryan to research materials needed to repair 16" OD & 16" ID pipe, repair clamps and couplings for future 16" main breaks.
5. Water Atlas – Update to include separate maps for CVWD pump lines
 - **ACTION ITEM:** Brook to provide updated maps from GIS for CVWD pump lines

6. Shut down scenarios for CVWD pump lines
 - **ACTION ITEM:** Operations & Engineering need to set up procedures for shut down scenarios for CVWD pump lines.

Saturday - 7/28/18 - 9:00 PM – 12:00 AM

1. Expanded shutdown – Water still flowing from main leak
 - 16-inch Valve (V15-105) & 4-inch bypass valve (V15-21) at Ramsdell & Stevens – **Did Not Close**
 - 16-inch Valve (V15-131) & 4-inch bypass valve (V15-09) at Paraiso Way & Ramsdell – **Closed**
 - o Water flow greatly reduced after V15-131 closed
 - o Water flow within Zone 4 – shutdown
2. De-watering 16-inch Water Main
 - De-watering started around 3:00AM
3. Access to 16-inch Water Main
 - Continued to grade area for access
4. Reservoir Water Levels
 - Reservoir water levels in Zones 5 through 11 were getting low due to demand in the zones and no additional water coming into Oak Creek
 - Reservoir water level in Rosemont Reservoir getting low due to no water coming in from Ocean View/Paschall/Mills Plant

Lesson Learned:

1. Valve Book – Valve Book and valve book needs to be updated
 - **ACTION ITEM:** Brook to work with Bryan & Joe H. on updating the valve book and valve information and to include inoperable valves
2. Suggestion – Replace broken 16-inch gate valves with 16-inch butterfly valves
3. Suggestion – Install an in-line 16-inch valve to reduce the shutdown area
4. Low Reservoir Water Level in Rosemont Reservoir
 - **ACTION ITEM:** Planning for Pressure Reducing Station from Zone 5 to Zone 3 & 4.

Sunday - 7/29/18 - 12:00 AM – 6:00 AM

1. Dewatering Pipeline
 - Pipeline was dewatered by 5:00 AM
2. Crews excavated area to exposed 16-inch pipe.
 - Crews got OD of 16-inch pipe – 16.25”
 - Brought up repair clamp from Glenwood
3. Water main break was on a bell & spigot joint
4. Received at least 10 calls from customers about water outage
5. Installed full circle stainless steel repair clamp.

6. Started opening valves to recharge the 16-inch main and Zone 4.
7. Repair Clamp not holding due to bell & spigot joint

Lesson Learned:

- Same as 9:00 PM – 12:00 AM
-

Sunday - 7/29/18 - 6:00 AM – 10:00 AM

1. Slowly recharged the 16-inch main and Zone 4.
 - Zone 4 had water by 9:00AM
 - Water still leaking through repair clamp
2. 6:00 AM – Started receiving higher volume of phone calls about water outage
3. 7:20 AM – Started seeing water outage posts on Next Door and Facebook
4. 7:30 AM - Reservoir level status:
 - Rosemont - 4.11'
 - Eagle Canyon - 11.26'
 - Oak Creek - 9.64'
 - Markridge - 12'
 - Dunsmore - 11'
 - Ocean View - Full
 - Encinal - Full
5. 8:30 AM – Mark Hass switched the Stand-By phone to the main office. Dennis & David answered phones
6. 8:45 AM - David G. prepared a Water Outage Alert that was posted on CVWD's Website by 12:00 PM.
7. 8:50 AM – Nem sent e-mail to Board members on status of water outage
8. 9:00 AM – David G., Nem & Dennis met at main office to discuss next course of action as the repair clamp was not holding
 - Regroup at 10:00 PM to repair pipe with weld couplings
 - Contact Welder to meet at site at 10:00 PM
 - Dennis contacted Allen Pipeline, they will send out a welder at 10:00 PM
 - Prepare to post message on Website and Nixle for Water Outage from 10:00 PM – 7/29/18 to 6:00 AM – 7/30/18
9. 9:00 AM – Water was restored to Zone 4
 - Call volume at Main Office decreased
 - Majority of calls were about brown or rusty water
10. 9:30 AM - Mark posted an advisory message on Nixle - notification services for local police departments, county emergency management offices, municipal governments and their agencies.
11. 11:00 AM – Main office phones were transferred back to Stand By phone
12. 11:30 AM – Crews cleaned up site and went home

13. 11:30 AM - Operators turned on pumps to fill Rosemont and Oak Creek Reservoirs and contacted FMWD
14. 12:00 PM – Updated Water Outage Alert posted on Website and Nixle for shutdown starting at 10:00 PM – 7/29/18 to 6:00 AM – 7/30/18.

Lesson Learned:

1. Low Reservoir Water Level in Rosemont Reservoir
 - **ACTION ITEM:** Planning for Fire Hydrant connection from Zone 5 to Zone 3 & 4.
2. Low Reservoir Water Level – Zone 5 to Zone 11 Reservoirs
 - **ACTION ITEM:** Set up planning scenarios and table top exercises for moving water into upper zones.

Sunday - 7/29/18 - 10:00 AM – 10:00 PM

1. Crews rested and reported to Glenwood Plant at 10:00 AM
2. Stand By phone continued to receive calls about brown water.
 - Customers were told to flush their indoor plumbing
3. Bryan put a small sump pump in excavation area to pump out water leaking from the repair clamp
 - Bryan checked on the pump at 2:00 PM
4. Operators continued pumping to fill Rosemont and Oak Creek Reservoirs and monitored water levels in the upper zones.

Lesson Learned:

1. Crew Fatigue – Crews had worked for 17 – 18 hours, needed to go home to rest
 - **ACTION ITEM:** Set up plan for relieving crews during long periods. Set up plan for on-call contracting services from pipeline contractors.

Sunday - 7/29/18 - 10:00 PM – Monday - 7/30/18 - 6:00 AM

1. 10:00 PM – Field crew and welder reported to Glenwood Plant
2. Reservoir Levels at 9:10 PM
 - Rosemont - 11.93'
 - Eagle Canyon - 20.53'
 - Oak Creek - 8.73'
 - Markridge - 15.63'
 - Dunsmore - 13.27'
 - Ocean View - 19.62'
 - Encinal - 12.84'
3. 12:00 PM – Finished turning valves and started dewatering pipeline
4. 2:20 AM - Pipeline dewatered and started repair on pipeline
 - Dennis and welder determined that weld couplings would not work due to the joint
 - Need to replace 2 foot section of pipe and weld on couplings
 - Found material at Allen Pipeline

5. 5:20 AM – Dennis sent e-mail to Customer Service about event and said that water should be back on for Zone 4 around 7:15 AM
6. 6:35 AM – Starting turning valves to fill water line
 - Revised notice about water service back on to 8:30 AM
7. 6:45 AM – Stand by phone transferred to Office
8. 7:00 AM – Website and Nixle notice updated with water service returning about 8:30AM
9. 8:45 AM – Dennis updated the notice about water service to be restored by 9:30 AM
10. 9:30 AM – Dennis notified all staff that the water has been restored to Zone 4
11. 10:00 AM – Christy contacted DDW about the water main break
12. 10:20 AM – Nem informed the Board on the status of the water main break
13. 10:30 AM - Customer Service received phone calls the remainder of the day about brown water

Lesson Learned:

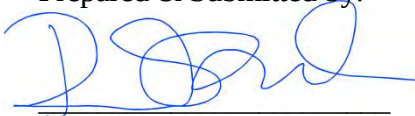
1. Customer Services & Phone Calls
 - **ACTION ITEM:** Set up procedures to bring in customer service staff during off-hours to handle the additional calls
-
-

RECOMMENDATION:

Staff would like to recognize Dennis Maxwell, Bryan Jones and the rest of the team for the ability to handle the situation, communication to customers and decisive thinking to repair the pipeline in a timely manner.

Next step will be for staff to submit a claim to Southern California Edison to recover CVWD's cost for repairing the water main.

Prepared & Submitted by:



David S. Gould, P.E.
District Engineer

CRESCENTA VALLEY WATER DISTRICT

STAFF REPORT

Information Item No. 4
August 9, 2018

To: Engineering Committee
From: Brook Yared, P.E. – Senior Engineer
Subject: **Water Main Easement at Quail Creek Channel and the 3100 Block of Brookhill St.**

INFORMATION ITEM:

Discussion of Water Main Easements at Quail Creek Channel and the 3100 Block of Brookhill Street

BACKGROUND:

The construction of a new 8-inch water main on 3100 Block of Brookhill Street began in March 2018. The Quail Creek flood control channel intersects with the water main on Brookhill St between Cloud Ave and Pennsylvania Ave.

The depth of pavement over the top of the Quail Creek channel was found to be about 8 to 10-inches thick. The existing 4-inch main was small enough to pass over the flood control channel while still maintaining sufficient cover above the pipe to prevent damage associated with traffic loading.

The new water main being installed as part of E-982 is an 8-inch main, tunneling between the road surface and the top existing channel would not provide enough clearance. Staff's design is to core drill through the outside wall of the channel and attach the new water main to the outside of the box culvert. This design and construction has been completed on a least three (3) other channel crossings within the District.

Staff has been working with Los Angeles County Flood Control District (LACFCD) and after lengthy and time consuming discussions, it was determined that CVWD would have to get an easement from LACFCD, along with an encroachment permit. This is in-lieu of only getting an encroachment permit from LACFCD, which has been their past practice.



In addition, the access roadway along the east and west sides of the channel is not owned by LACFCD. LACFCD has easements dedicated from the property owners at 3130 & 3138 Brookhill Street.

In order to complete the construction of the pipeline over the channel, CVWD will need to obtain three (3) easements, one easement from LACFCD and one easement from each of the adjacent neighbors. Without the easements, CVWD would not have the legal authority to access the property for installation or maintenance of the new 8-inch water main.

DISCUSSION:

Staff reached out to both property owners in April 2018, as well as to LACFCD to obtain these easements with little success.

LACFCD is requiring CVWD to perform a land appraisal of the area over the channel and that the appraisal must be completed prior to considering granting an easement. The cost of the appraisal is approximately \$5,500, which likely exceeds the cost of the easement itself.

LACFCD is requiring an appraisal for the approximately 440 sq. ft. easement. After negotiating with LACFCD, it appears that they are willing to waive the appraisal requirement and accept an alternative minimum reimbursement of \$5,000 for the easement. Staff will follow up with details shortly.

With respect to the other easements, initially, CVWD approached each property owner with an offering of \$1,000 for the waterline easement.

The home owner at 3138 Brookhill St. recently passed away. The family that inherited the property does not want to establish this easement prior to selling the home. Currently, the home is for sale. Once sold, CVWD plans to approach the new home owner with an initial offering of \$1,000, however, the time frame to complete this is on hold until the property is sold.

The home owners at 3130 Brookhill St. reviewed our initial request and responded with a counter offer of \$7,500 for the easement and a long list of stipulations. The District would be unable to comply with a majority of the stipulations as requested. Also, considering that there are already two easements preventing construction in the area, one for flood control maintenance and another for sanitary sewer, the amount being requested seems high. Staff plans to approach the home owner with the information regarding the existing easements in the area and renegotiating the cost and stipulations.

The contractor, Brkich Construction, has completed the work on the 3100 Block of Brookhill, both east and west of Quail Creek Channel. However, the easement issue needs to be resolved before Brkich can finish construction over the channel. Staff has discussed this with Brkich and they are planning to return to the site in September or early October to complete the work.

RECOMMENDATION:

Staff would like to inform the Engineering Committee of the situation for discussion and comments. Staff plans to work with the property owners and LACFCD to obtain these easements without incurring the costs of a third party appraisal of the land.

Prepared by:

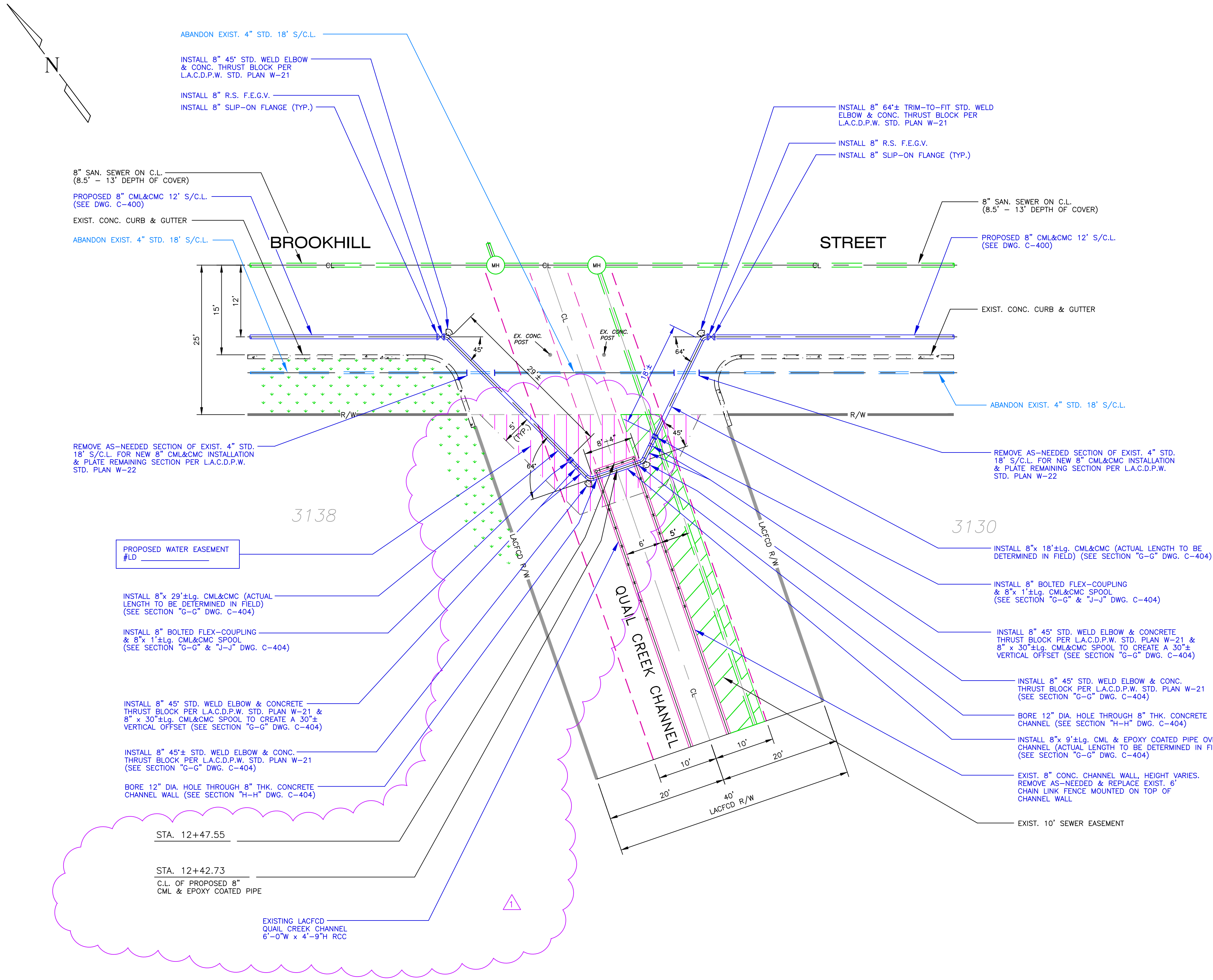
Submitted by:

Brook Yared, P.E.
Senior Engineer

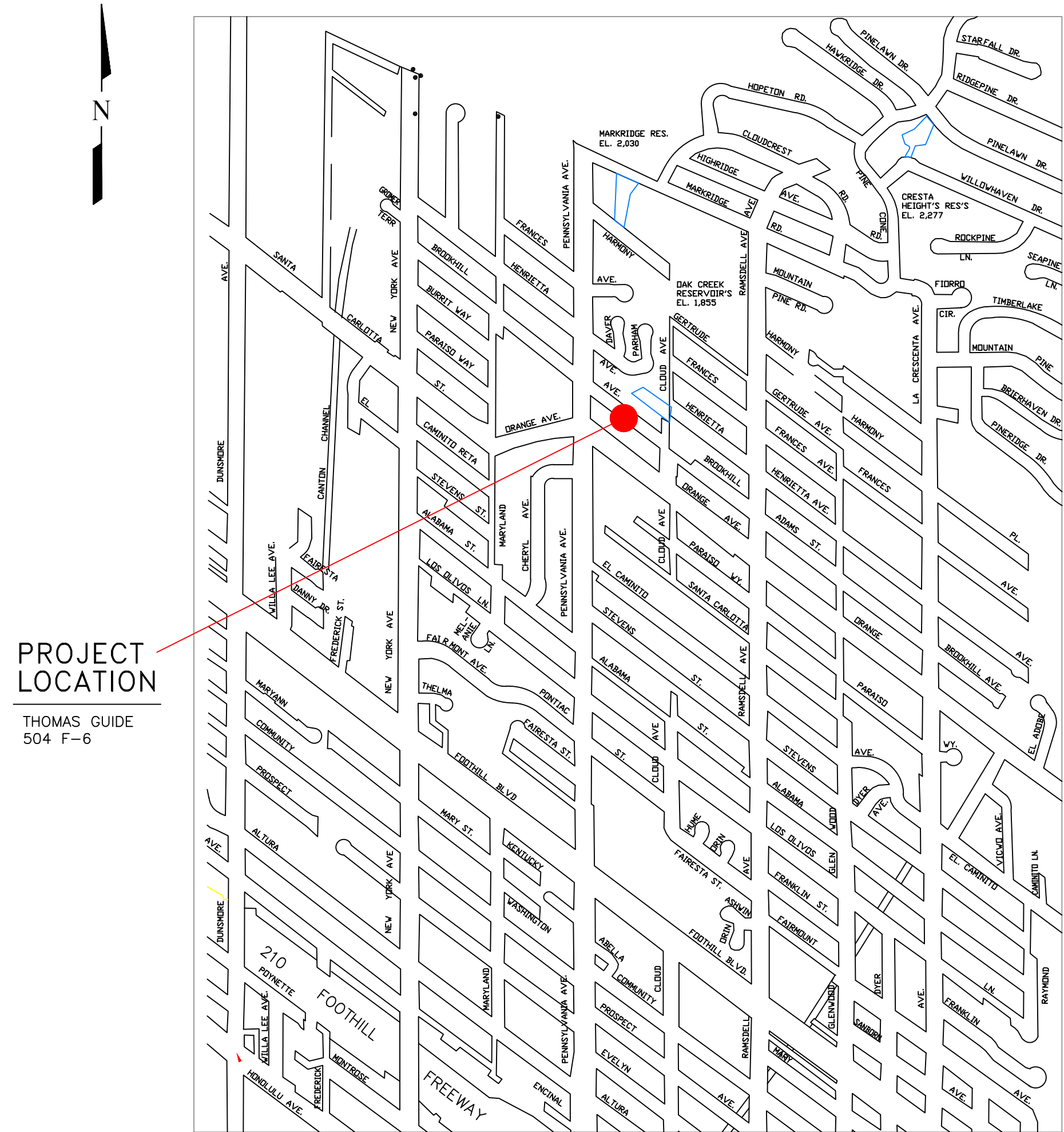
David S. Gould, P.E.
District Engineer

Attachments: Easement Documents

g:\engineering committee\2018 ec memo\08-09-18 ecm memo - 3100 blk brookhill easements.docx



DETAIL "F"
QUAIL CREEK CHANNEL CROSSING ON BROOKHILL ST.
N.T.S.



PROJECT LOCATION
THOMAS GUIDE
504 F-6

VICINITY MAP
N.T.S.

REVISIONS		APPROVED	DATE
1	REVISE PER LACFD COMMENTS (SHEET C-400, C-403 & C-404)	D.S.G./C.O.	12/1/17
2	RELOCATE 2 F.H.'S, ADD 1 F.H. (SHEET C-397)		
3	INSTALL 8"x80"±Lg. CML&CMC AT BROOKHILL & PENNSYLVANIA AVE. (SHEET C-400, C-401 & C-402)	D.S.G./C.O.	4/16/18

DISCLAIMER
Approval by C.V.W.D. does not constitute a representation as to the existence and location of underground utilities, structures, and conditions within the limits of this project.

SCALE: N.T.S.	DATE
DRAWN BY: J.A. HUERTA	11/21/16
CHECKED BY: C. OLMEDO	8/7/17
APPROVED: D.S. GOULD	8/7/17
AS BUILT:	

CRESCENTA VALLEY WATER DISTRICT
8" WATER MAIN INSTALLATION ON
BROOKHILL ST.
FROM RAMSDALL AVE. TO PENNSYLVANIA AVE. (DETAILS)

GLENDALE PERMIT #CV-07-17	
L.A.CO. PERMIT #PWRP2017119194	
SHT. 6 OF 7 SHTS.	
COMPLETION DATE:	LINEAR FT.
JOB NO. E-982	FILE NO. C-403



EXHIBIT "B"

EASEMENT FOR WATER LINE AND WATER LINE APPURTENANT STRUCTURES CROSSING OVER L.A. CO. F.C.D. FEE PORTION OF QUAIL CREEK CHANNEL, OF (R1).

SCALE: 1" = 30'



= HATCHED AREA INDICATES POSITION OF EASEMENT.

AREA OF EASEMENT = 299.48 SQ.FT. OR 0.014 ACRES, MORE OR LESS.

THE BEARING OF N 53° 15' 25" W ON THE CENTERLINE OF BROOKHILL STREET, AS SHOWN ON (R1), WAS TAKEN AS THE BASIS OF BEARINGS.

P.O.C.



C/L OF 40' WIDE EASEMENT TO L.A.CO.F.C.D. PER (R1).

N/E'LY RIGHT OF WAY OF BROOKHILL STREET.

S/W'LY RIGHT OF WAY OF BROOKHILL STREET.

T.P.O.B.

LEGEND:

- P.O.C. = POINT OF COMMENCEMENT.
- T.P.O.B. = TRUE POINT OF BEGINNING.
- (R1) = TRACT NO. 14358, M.B. 295/47-48.
- (R2) = L.A.CO.F.C.D. DWG. NO. 219-RW 2.1 DATED 4/3/58.

PORTION OF LOT 20, OF (R1), WITHIN L.A.C.F.C.D. (EASE.) PER (R2).

PORTION OF LOT 19, OF (R1), WITHIN L.A.C.F.C.D. (EASE.) PER (R2).

66' 33' 33'

AVENUE

PENNSYLVANIA

66' 33' 33'

50' 25' 53' 15' 25" E 377.37' +/-

BROOKHILL

S 18° 04' 13" W 26.39'

FLOOD CONTROL DISTRICT L.A.C.F.C.D. (EASE.) PER (R2)

SEE (R2) FOR FEE AND EASEMENT DETAILS.

QUAIL CREEK CHANNEL L.A.C.F.C.D. (EASE.) PER (R2)

L.A.C.F.C.D. (FEE) PER (R2).

N 18° 04' 13" E 18.36'

LOS ANGELES CO. L.A.C.F.C.D. (EASE.) PER (R2)

N 71° 55' 47" W 20.00'

L.A.C.F.C.D. (FEE) PER (R2)

L.A.C.F.C.D. (EASE.) PER (R2)

S 18° 04' 13" W 11.60'

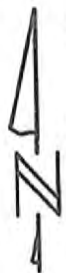
S 53° 15' 25" E 10.56'

STREET

50' 25'

EXHIBIT "B"

EASEMENT FOR WATER LINE AND WATER LINE APPURTENANT STRUCTURES
CROSSING OVER A PORTION OF LOT 20, OF (R1).



SCALE: 1" = 30'



= HATCHED AREA
INDICATES
POSITION OF
EASEMENT.

66'
33' 33'
AVENUE

POR. OF EASE. WITHIN LOT 20 =
200.43 SQ. FT. OR 0.005 ACRES, MORE OR
LESS.

THE BEARING OF N 53° 15' 25" W
ON THE CENTERLINE OF BROOKHILL STREET,
AS SHOWN ON (R1), WAS TAKEN AS THE
BASIS OF BEARINGS.

P.O.C.

PENNSYLVANIA

66'
33' 33'

S/W'LY RIGHT OF WAY
OF BROOKHILL STREET.

T.P.O.B.

PORTION OF LOT 20,
OF (R1), WITHIN
L.A.C.F.C.D. (EASE.)
PER (R2).

FLOOD CONTROL DISTRICT
L.A.C.F.C.D. (EASE.) PER (R2)
SEE (R2) FOR FEE
AND EASEMENT DETAILS.

QUAIL CREEK CHANNEL
L.A.C.F.C.D. (EASE.) PER (R2)

L.A.C.F.C.D. (FEE)
PER (R2).



C/L OF 40' WIDE EASEMENT
TO L.A.CO.F.C.D. PER (R1).

N/E'LY RIGHT OF WAY OF
BROOKHILL STREET.

C/L INT.

STREET

LEGEND:

P.O.C. = POINT OF COMMENCEMENT.

T.P.O.B. = TRUE POINT OF BEGINNING.

(R1) = TRACT NO. 14358, M.B. 295/47-48.

(R2) = L.A.CO.F.C.D. DWG. NO. 219-RW 2.1
DATED 4/3/58.

PORTION OF LOT 19, OF (R1),
WITHIN L.A.C.F.C.D. (EASE.)
PER (R2).

EXHIBIT "B"

EASEMENT FOR WATER LINE AND WATER LINE APPURTENANT STRUCTURES
CROSSING OVER A PORTION OF LOT 19, OF (R1).

SCALE: 1" = 30'

 = HATCHED AREA INDICATES POSITION OF EASEMENT.

66' 33' 33' POR. OF EASE. WITHIN LOT 19 = 99.05 SQ. FT. OR 0.002 ACRES, MORE OR LESS.

AVENUE

THE BEARING OF N 53° 15' 25" W ON THE CENTERLINE OF BROOKHILL STREET, AS SHOWN ON (R1), WAS TAKEN AS THE BASIS OF BEARINGS.

P.O.C.

PENNSYLVANIA

66' 33' 33'

S/W'LY RIGHT OF WAY OF BROOKHILL STREET.

PORTION OF LOT 20, OF (R1), WITHIN L.A.C.F.C.D. (EASE.) PER (R2).

LOS ANGELES CO. L.A.C.F.C.D. (EASE.) PER (R2)
N 18° 04' 13" E 18.60'
L.A.C.F.C.D. (FEE) PER (R2)
N 71° 55' 47" W 10.00'

PORTION OF LOT 19, OF (R1), WITHIN L.A.C.F.C.D. (EASE.) PER (R2).

FLOOD CONTROL DISTRICT L.A.C.F.C.D. (EASE.) PER (R2)
SEE (R2) FOR FEE AND EASEMENT DETAILS.

QUAIL CREEK CHANNEL L.A.C.F.C.D. (EASE.) PER (R2)

L.A.C.F.C.D. (FEE) PER (R2).



C/L OF 40' WIDE EASEMENT TO L.A.CO.F.C.D. PER (R1).

N/E'LY RIGHT OF WAY OF BROOKHILL STREET.

S 18° 04' 13" W 8.22'

LEGEND:
P.O.C. = POINT OF COMMENCEMENT.
T.P.O.B. = TRUE POINT OF BEGINNING.
(R1) = TRACT NO. 14358, M.B. 295/47-48.
(R2) = L.A.CO.F.C.D. DWG. NO. 219-RW 2.1 DATED 4/3/58.

STREET

T.P.O.B.

C/L INT.

CRESCENTA VALLEY WATER DISTRICT

STAFF REPORT

Information Item No. 5
August 9, 2018

To: Engineering Committee
From: David S. Gould, P.E. – District Engineer
Subject: **New Development at 4201 Pennsylvania – Acceptance of Water Infrastructure and Easements, D-16-39**

INFORMATION ITEM:

New Development at 4201 Pennsylvania – Acceptance of Water Main, Fire Hydrants, Water Services, and Easements, D-16-39

BACKGROUND:

Staff has been working with the developer, Gangi Development (developer) on construction of 28 new townhomes located at 4201 Pennsylvania since 2016. The project is located within the City of Glendale and CVWD is providing the water service for the project. The project will require an 8-inch water main for fire protection and new water services. As required by State law, each unit will require a separate water service and meter.



The cost and installation of the new water line is the responsibility of the developer per CVWD's rule and regulations and has to be built to CVWD's standards. The developer is also responsible for the cost of plan review and inspection services. Finally, the developer is responsible for dedicating the water infrastructure to CVWD and dedicating easements for any of the infrastructure within private property.

The developer entered into an agreement with CVWD (see attached agreement) that dictates the requirements and procedures that the developer must follow.

DISCUSSION:

The developer and its contractor have completed the installation of the 8-inch water main, fire hydrants and water services. However, they have only constructed 9 of the 28 new units, since they are constructing the project in phases, and there are still several construction issues that need to be addressed. The developer has been pressuring staff to bring this issue as a Board agenda for approval this month. They are requesting approval of the final Tract Map in order to begin the process of subdividing and selling the completed units. According to the agreement, staff still has the option to withhold water meters and meter boxes should the developer attempt to sell the property without correcting any construction issues CVWD has remaining.

At the time of construction, the developer chose to reuse native soils for backfill against CVWD standards. The majority of soil compaction tests above the water main and service laterals have failed as a result, which could result in damage to the water main. CVWD has requested that the developer excavate and replace all backfill with crushed miscellaneous base or one-sac slurry as per CVWD's standards.

The easements required by CVWD are shown on the Tract Map (see attached) that will be dedicated to CVWD. Staff has reviewed the easement locations, and as of the last submission on July 31, 2018, the majority of installed laterals appear to be located within the easements shown on the map. The water infrastructure needs to be accepted by the Board, and Tract Map needs to be signed the General Manager (after authorization from the Board) before the Tract Map can be recorded.

RECOMMENDATION:

Staff's recommendation is to wait until the developer has met the construction requirements of the agreement and that all the water meters are installed. In the interim, staff could work with the Developer on a stipulation to the agreement that will guarantee the work to be completed after the Tract Map is signed.

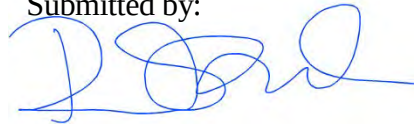
Prepared by:

Brook Yared, P.E.
Senior Engineer

Attachments:

1. Developer Agreement
2. Tract Map

Submitted by:



David S. Gould, P.E.
District Engineer

4201 Penn
D-16-39

**CRESCENTA VALLEY WATER DISTRICT
AGREEMENT FOR
CONSTRUCTION OF WATER SYSTEM IMPROVEMENTS**

THIS AGREEMENT is entered into as of the 8 day of November, 2017, by and between CRESCENTA VALLEY WATER DISTRICT, a county water district, ("District") and Pentwoods Village II, LLC (owner) whose address is 4201 Pennsylvania Avenue, AIN 5606-011-0163 ("Developer").

RECITALS:

A. District is engaged in the production, transmission and distribution of the water system within its service area.

B. Developer owns a parcel of real property, commonly identified as: **4201 Pennsylvania Avenue, AIN 5606-011-0163** ("Development") within the District's service area.

C. Developer desires to secure water and fire service to the Development from the District and the District is willing to provide such service on the terms and conditions set forth in this Agreement, and in accordance with rules and regulations adopted by the District.

D. Developer shall provide to the District, the plans for water system improvements for the Development ("Facilities") and shall grant to the District the easements required for the operation and maintenance of the improvements.

E. On 11/8/17 the District approved said plans designated as Water System Improvements For 4201 Pennsylvania, which plans and specifications ("Plans") are attached as Exhibit 1.

F. Developer intends to construct the Facilities in accordance with the approved Plans, which Facilities will be connected to the District's system.

AGREEMENT

A. Construction Drawings: Developer is required to provide construction drawings for the construction of the water main, water meter services, fire services and fire hydrants to District for review and approval.

1. These plans shall be prepared by a State of California licensed Civil Engineer and shall be in accordance with District standards.

2. The minimum design requirements shall be: the alignment should parallel to the existing property line; the pipeline depth shall be a minimum 36" below finish grade and the water main shall connect to the existing water main on Pennsylvania Avenue.

3. Provide appropriate clearance for District to maintain ingress and egress of District equipment onto the property.

4. A new waterline easement shall be prepared by the Developer and dedicated to the District for the operation and maintenance of the improvements.

B. Construction of Facilities: Within 14 calendar days from the date of this Agreement, Developer shall secure all required permits for construction of the Facilities in accordance with the Plans.

C. District reserves the right to approve all materials used in construction of the Facilities. All work shall be done to the satisfaction of the District and in a good and workmanlike manner. All work shall be performed in accordance with District rules and regulations. By entering into this Agreement, Developer represents and warrants that it is familiar with the District's current Standard Specifications for Construction.

1. Qualifications of Contractor and Subcontractors: All work shall be performed by contractors approved by District and possessing that class of contractor's license issued pursuant to Division 3, Chapter 9, of the Business and Professions Code required for construction of the Facilities.

2. Developer proposes to enter into a contract with Gang: Builder ("Contractor") for construction of the Facilities. Developer shall secure from Contractor the following information for review and approval by the District:

(a) Provide information regarding its experience, financial condition, and business references to be set forth on Exhibit 2. Contractor shall have at least three (3) years' experience in performing similar work.

(b) The Contractor's Licensing Statement in the form attached as Exhibit 3.

(c) The names and addresses of subcontractors, if any who will perform work under the contract between Developer and the Contractor or who will specially fabricate and install a portion of the work to be set forth on the form attached as Exhibit 4. The Construction contract shall provide that subcontractors may not be substituted without District's prior approval. Contractor may not subcontract for more than 40% of the work to be performed under its contract with Developer.

D. Inspection of Facilities: District shall at all times have access to the Development during construction of the Facilities and shall be provided with every opportunity for ascertaining full knowledge respecting the progress, workmanship, and character of the materials and equipment used and employed in construction of the Facilities. Contractor shall give timely notice to District in advance of any work being performed on a Saturday, Sunday or Holiday designated by District, or for more than eight hours in a work day. Contractor shall also give timely notice to the District in advance of back filling or otherwise covering any part of the Facilities constructed so that the District may, if desired, inspect such work before it is concealed. The observation, if any, by District of the construction of the Facilities shall not relieve Developer or Contractor of any of their obligations under this Agreement. Defective work shall be made good, and materials and equipment furnished and work performed which is not in accordance with the approved Plans, and District's current Standard Specifications for Construction, may be rejected notwithstanding the fact that such materials, equipment and work have been previously inspected by District.

E. Agreement to be Binding on Contractor: Developer shall furnish Contractor with a copy of this Agreement and shall cause Contractor to be bound by the terms and conditions of this Agreement, by having a written agreement with Contractor, which agreement shall incorporate by reference the terms and conditions of this Agreement. A fully executed copy of the agreement between Developer and Contractor shall be delivered to District prior to commencement of work, and attached hereto as Exhibit 5.

F. Bonds

1. Prior to Contractor's commencement of work, Contractor shall furnish and deliver to District a bond with a responsible corporate surety or corporate sureties acceptable to District conditioned upon the Faithful Performance of Contractor of all covenants and stipulations of this Agreement, and of Contractor's agreement with Developer. Said bond shall be on the mandatory form attached hereto as Exhibit 6, and shall be an amount that is not less than 100% of the total amount payable under Contractor's agreement with Developer.

2. Prior to commencement of work, Contractor shall also furnish a Payment Bond. Said payment bond shall be in a sum not less than 100% of the total amount payable under Contractor's agreement with Developer, and shall be on the mandatory form attached hereto as Exhibit 7.

3. The surety or sureties on all bonds furnished must be satisfactory to the District. If during the course of construction any of the sureties in the sole discretion of the District are or become insufficient, District may require additional sufficient sureties which the Contractor shall furnish to the satisfaction of the District within fifteen (15) days after written notice thereof.

G. Insurance Requirements of Developer

1. Prior to the commencement of work, Developer shall cause Contractor to forward to the District a policy or certificate of protective liability insurance in which the District shall be named as additional insureds with Contractor. The policy shall insure the District and its directors, officers, employees, agents, and consultants as additional named insureds as well as the Contractor, its employees and its subcontractors and each of their employees, and their heirs, agents, and employees, while acting within the scope of their duties, against all claims arising out of or in connection with the work to be performed and shall remain in full force and effect until the work is accepted by the District.

2. The District, its directors, officers, employees, agents, and consultants are to be covered as insureds with respect to the following: liability arising out of activities performed by or on behalf of the Contractor, products and completed operations of the Contractor; premises owned, occupied or used by the Contractor; or automobiles owned, leased, hired or borrowed by the Contractor.

3. The coverage shall contain no special limitations on the scope of protection afforded the additional insureds.

4. The above-referenced insurance policy (or policies) shall be furnished at Contractor's expense, in a form and with insurance companies authorized to do business and have an agent for service of process in California and have a "B+" policyholder's rating and a financial rating of at least Class VII in accordance with the most recent Best's Insurance Guide.

5. Such insurance, in addition to the multiple additional named insured endorsements set forth above, shall be broad form commercial general liability insurance in the amounts set forth below, and shall contain additional endorsements as follows:

- (i) Provide blanket contractual liability coverage for Contractor's indemnification obligations to District and others pursuant to this Agreement and the agreement between the Developer and Contractor
- (ii) Provide coverage for explosion, collapse, underground excavation and removal of lateral support
- (iii) Provide that the insurance may not be canceled or reduced until 30 days after the District and its Engineer have actually received written notice of such cancellation or reduction
- (iv) Provide "cross liability" or "severability of interest" coverage for all insureds under the policy or policies
- (v) Provide that any other insurance maintained by District, the Engineer or any other named insured is excess insurance, and not contributing insurance with the insurance required herein
- (vi) Provide that the coverage afforded the additional insureds shall not be affected by any failure of the Contractor or any subcontractor to comply with reporting or other provisions of the policy or policies, including breaches of warranties.
- (vii) The amount of coverage shall be no less than the following:
 - a) General bodily injury and property damage - \$2,000,000 per occurrence.
 - b) Automobile bodily injury and property damage - \$1,000,000 per occurrence, including owned, non-owned and hired autos, and providing coverage for loading and unloading.

6. The Contractor shall also be required to provide and maintain Builder's Risk Insurance covering all risks of direct physical loss, damage or destruction to the work in the minimum amount of the dollar value of the Facilities. Such insurance shall include explosion, collapse, underground excavation and removal of lateral support. The District shall be named as an additional insured on any such policy.

7. The evidence of insurance required to be provided to the District shall include original copies of the ISO CG 2010 (or insurer's equivalent) signed by the insurer's representative and certificate(s) of insurance (Accord Form 25-S or equivalent) reflecting the existence of the required insurance.

- (i) Where requested by the city, county or other governmental agency in whose jurisdiction the work is being performed, the city, county or other governmental agency shall be named as an additional insured
- (ii) If required by the District, Developer shall furnish a complete copy of the policy or policies, and all endorsements thereto.
- (iii) Commercial general liability insurance must include District's and Contractor's Protective Coverage, Products - Completed Operations Coverage, Premises - Operations Coverage, and must provide for coverage of District's facilities during the course of construction.

H. Schedules and Notice: Developer shall provide District with a schedule for construction of the Facilities and shall keep District advised of the schedule and progress of work. No work shall be performed unless the following occurs:

1. There has been a pre-construction meeting with representatives of District, City of Glendale, Utility Companies, Developer and Contractor in attendance.

2. District has been given written notice of the name and telephone number of Contractor's job superintendent who shall be Contractor's representative at the job site and shall have authority to act on behalf of Contractor, and the name and telephone number of Contractor's alternate in the event the job superintendent is unavailable.

3. District has been given at least five (5) working days written notice of the commencement of work.

I. Plan Review and Inspection Fees: Upon execution of this Agreement, Developer shall pay District's deposit for plan review and inspection services. The estimated costs of the foregoing are:

(a)	Plan Review	\$ <u>2,000.00</u>
(b)	Inspection	\$ <u>10,000.00</u>
	Total	\$ <u>12,000.00</u>

The cost for design, plan review, installation, and inspection shall be borne by the Developer. This is a deposit towards the actual cost to the District. You will be either invoiced or reimbursed by the District for any deviation upon completion of all work. The consulting engineer shall meet with District to review feasibility, design standards, and special conditions of the construction plans.

J. Payment for Work: All work related to the development and construction of the Facilities is for the convenience of and at the request of Developer, who shall be solely responsible for all costs and expenses in connection therewith. District shall not be responsible to Contractor or its subcontractors, suppliers or material men for such work. Developer shall not permit any claim to be enforced against the Facilities, however it may arise. Regardless of the merits of any claim, Developer shall, within five (5) business days of the assertion thereof, cause said claim to be discharged or provide a bond releasing such claim, in a form satisfactory to District.

K. No Agency: Neither Developer nor Contractor are the agents or representative of District. Neither has any authority to in any way commit or bind District.

L. Indemnification: To the fullest extent permitted by law, Contractor and Developer shall jointly and severally indemnify and hold harmless District, its directors, officers, agents, employees, and consultants from and against all claims, damages, losses, expenses, and other costs, including, but not limited to, costs of defense and attorneys' fees, arising out of or resulting from or in connection with the construction of the Facilities or the Development, both on and off the job site, provided that any such liability (1) is attributable to personal injury, bodily injury, sickness, disease or death, or to injury to or destruction of tangible property, including the loss of use resulting therefrom, and (2) is caused in whole or in part by an act or omission of Developer, Contractor, any subcontractor, any supplier, anyone directly or indirectly employed by any of them or anyone for whose acts or omissions any of them may be liable, regardless of whether or not it is caused in part by any act or omission (active, passive, or comparative negligence included), of a party indemnified hereunder. The obligation hereunder shall not be abridged, reduced or discharged by the maintenance of insurance by the Contractor or Developer. Developer and Contractor shall also jointly and severally indemnify and hold harmless District, and its consultants, and each of their directors, officers, employees, agents, and consultants from and against all losses, expenses, damages (including damages to the Development or Facilities), attorneys' fees, and other costs, including all costs of defense, which any of them may incur with respect to the failure, neglect, or refusal of Developer or Contractor to faithfully perform the work and/or any of either of their obligations under this Agreement or under the agreement between Developer and Contractor.

M. Compliance with Laws: The agreement between Developer and Contractor shall require that: (a) Contractor shall conduct its operations so as to avoid injury or damage to any person or property, and to minimize any obstruction and inconvenience to the public; (b) Contractor shall comply with all applicable laws or regulations relating to the work including safety measures applicable in particular operations or kinds of work; (c) Contractor shall provide and maintain such fences, barriers, directional signs, lights, and flag men as are necessary to give adequate warning to the public at all times of any dangerous conditions to be encountered as the result of the construction work and to give directions to the public; and (d) Contractor shall be solely and completely responsible for conditions of the job site, including safety of all persons and property during construction of the Facilities.

N. One Year Guarantee. Developer and Contractor jointly and severally guarantee all work against defects in workmanship or materials for a period of one year after District's acceptance of the Facilities. Developer and Contractor, or either of them, shall repair or remove and replace any and all such work, together with any other work which may be displaced in so doing, that is found to be defective in workmanship and/or materials within said one year period, without expense whatsoever to District.

In the event of a failure to comply with the above-mentioned conditions within seven (7) business days after being notified in writing, District shall be entitled to have the defects remedied and the work repaired or replaced at the expense of Contractor and Developer. Developer and Contractor agree to pay all such expenses immediately on demand therefor by District. The performance bond and the payment bond shall continue in full force and effect for the guarantee period.

O. Maintenance and Repair of Facilities: Developer shall protect and maintain the Facilities through completion of the Development. In the event all or any part of the Facilities are damaged or destroyed, Developer shall repair or replace said Facilities without cost to District.

P. Donation and Acceptance of Facilities: Upon completion of construction, all Facilities connected to the District's water distribution system shall be donated by the Developer to the District free and clear of all liens, claims and encumbrances and shall become the property of District upon acceptance of the Facilities for operation, maintenance, and repair by the District. District will require Developer to provide a deed, bill of sale, or other instrument of conveyance, conveying the Facilities from the Developer to the District.

Q. Dedication of New Easement: Upon completion of construction, the Developer shall prepare the necessary forms, provide a legal description signed by a State of California licensed Civil Engineer Land Survey and record at the Los Angeles County's recorders office a 20 foot wide waterline easement including ingress and egress to the District over the construction of the pipeline.

R. Construction Water: Developer and/or Contractor shall pay for the use of construction water in accordance with District's rules and regulations.

S. Rules and Regulations of Water District: Developer shall comply with all applicable District rules and regulations.

T. Street Plans, Surveys, As-Built Drawings, Compaction Tests, Bacteriological Tests and Various Water Main Tests: Not less than fifteen (15) days prior to commencement of construction, Developer shall provide to District and Contractor a complete set of final approved plans and profile drawings for water facilities which are prepared, approved and signed by a registered civil engineer and approved and signed by all applicable regulatory agencies. Prior to commencement of construction, Developer shall provide accurate field staking, i.e., cut stakes, field stakes and final grade stakes based on final approved plans. Developer shall provide District with compaction tests in accordance with County, City and District requirements

U. Upon completion of construction, Developer shall provide District with legible as-built drawings showing all water facilities; said as-built drawings shall include a written narrative statement which clearly describes all modifications, changes or deviations from the approved plans. Upon completion of construction, Developer shall provide District with a minimum of two (2) consecutive bacteriological test results on all water facilities, the samples for which are collected in accordance with all applicable standards and regulations. Samples for bacteriological analysis shall be submitted to a laboratory approved by the District. Samples shall be taken at least twenty-four (24) hours apart from one another. Should any tests fail or not be acceptable Developer shall take additional samples at such sampling points in accordance with all standards and regulations and the requirements of District and all regulatory agencies. The Developer shall also perform and provide results of pressure tests of all water mains. Tests not acceptable to the District's inspector shall have corrections made to the pipelines at no cost to the District. All tests shall be performed in accordance with District Standard Specifications. Developer understands and agrees that water main cannot be provided to Developer's project unless and until all Facilities are completed in accordance with plans and specifications, transferred to District and accepted in writing by District.

V. Attorneys' Fees: In any action, at law or in equity, including an action for declaratory relief, seeking to interpret or enforce the terms of this Agreement, the prevailing party shall be entitled to recover a reasonable amount as attorneys' fees and costs incurred in prosecuting or defending such action, including a dispute submitted to arbitration, in addition to any other relief to which such party is entitled.

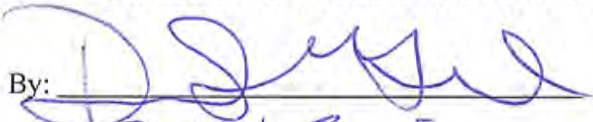
W. Not Assignable: The rights and obligations of Developer and Contractor under this Agreement shall not be assignable without the prior written consent of District.

X. Entire Agreement: This Agreement constitutes the entire Agreement of the parties with respect to the subject matter, and no amendment, modification or alteration of the terms hereof shall be binding unless the same is in writing, dated subsequent to the date hereof and duly approved and executed by each of the parties.

Y. Choice of Law: This Agreement, and the application or interpretation hereof, shall be governed exclusively by its terms and by the laws of the State of California. Venue for all purposes shall be deemed to lie within Los Angeles County, California, and any action to enforce this Agreement or for any remedies, damages, or other relief shall only be brought in either the State courts of the State of California in and for the County of Los Angeles or in the United States District Court, Central District of California.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed as of the day and year first above written.

CRESCENTA VALLEY WATER DISTRICT

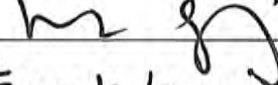
By: 
Its District Engineer
[TITLE]

By: _____

Its _____
[TITLE]

DEVELOPER

Northwood Village II, LLC

By: 

Its Frank Bang
President [TITLE] general partner

By: _____

Its _____
[TITLE]

TRACT NO. 73651
IN THE CITY OF GLENDALE, COUNTY OF
LOS ANGELES, STATE OF CALIFORNIA

BEING A SUBDIVISION OF PORTIONS OF LOTS 3 THROUGH 14, INCLUSIVE, OF TRACT NO. 5547 AS PER MAP FILED
IN BOOK 59, PAGES 37 AND 38 OF MAPS AND PORTIONS OF LOTS 18 THROUGH 20 OF TRACT NO. 5782, AS PER
MAP FILED IN BOOK 74 PAGE 66 OF MAPS, BOTH IN THE OFFICE OF THE LOS ANGELES COUNTY RECORDER.

FOR CONDOMINIUM PURPOSES

OWNER'S STATEMENT

WE HEREBY STATE THAT WE ARE THE OWNERS OF OR ARE INTERESTED IN THE LANDS INCLUDED
WITHIN THE SUBDIVISION SHOWN ON THIS MAP WITHIN THE DISTINCTIVE BORDER LINES, AND WE
CONSENT TO THE PREPARATION AND FILING OF SAID MAP AND SUBDIVISION.

WE HEREBY IRREVOCABLY OFFER FOR DEDICATION TO THE CITY OF GLENDALE AN EASEMENT FOR
SEWER LINE PURPOSES AS SHOWN ON SAID MAP.

WE HEREBY OFFER FOR DEDICATION TO CRESCENTA VALLEY WATER DISTRICT AN EASEMENT FOR
WATER PIPELINE, APPURTENANCES AND ACCESS PURPOSES AS SHOWN ON SAID MAP.

NORTHWOODS VILLAGE II, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

BY: _____ BY: _____

PRINT NAME: _____ PRINT NAME: _____

PRINT TITLE: _____ PRINT TITLE: _____

CITIZENS BUSINESS BANK, BENEFICIARY UNDER CONSTRUCTION DEED OF TRUST RECORDED ON
MAY 19, 2017 AS INSTRUMENT NO. 20170559738 OF OFFICIAL RECORDS OF LOS ANGELES COUNTY.

BY: _____ BY: _____

PRINT NAME: _____ PRINT NAME: _____

PRINT TITLE: _____ PRINT TITLE: _____

GLENDALE WATER AND POWER CERTIFICATE

ALL EASEMENTS REQUIRED BY THE PUBLIC SERVICES DIVISION FOR UTILITIES HAVE BEEN GRANTED
AND/OR OFFERED FOR DEDICATION.

APPROVED _____
GENERAL MANAGER,
GLENDALE WATER AND POWER
DATE _____

I HEREBY CERTIFY THAT SECURITY IN THE AMOUNT OF \$ _____ HAS BEEN FILED WITH
THE EXECUTIVE OFFICER, BOARD OF SUPERVISORS OF THE COUNTY OF LOS ANGELES AS SECURITY
FOR THE PAYMENT OF TAXES AND SPECIAL ASSESSMENTS COLLECTED AS TAXES ON THE LAND
SHOWN ON MAP OF TRACT NO. 73651 AS REQUIRED BY LAW.

EXECUTIVE OFFICER, BOARD OF SUPERVISORS OF THE
COUNTY OF LOS ANGELES, STATE OF CALIFORNIA.

BY _____
DEPUTY
DATE _____

CRESCENTA VALLEY WATER DISTRICT CERTIFICATE

I, HEREBY CERTIFY THAT THIS MAP WAS PRESENTED FOR ACCEPTANCE AND DEDICATION TO THE
BOARD OF DIRECTORS OF THE CRESCENTA VALLEY WATER DISTRICT AT A REGULAR MEETING OF THE
BOARD OF DIRECTORS HELD ON THE _____ DAY OF _____, 2018, AND THAT
THEREUPON SAID BOARD DID, BY AN ORDER DULY PASSED AND ENTERED, ACCEPT THE EASEMENTS
FOR WATER PIPELINE, APPURTENANCES AND ACCESS PURPOSES THEREBY OFFERED.

BY _____
DATE _____

SURVEYOR'S STATEMENT

THIS MAP WAS PREPARED BY ME OR UNDER MY DIRECTION AND IS BASED ON A FIELD SURVEY IN
CONFORMANCE WITH THE REQUIREMENTS OF THE SUBDIVISION MAP ACT AND LOCAL ORDINANCE AT
THE REQUEST OF NORTHWOODS VILLAGE II, IN JUNE, 2017. I HEREBY STATE THAT THIS FINAL MAP
SUBSTANTIALLY CONFORMS TO THE APPROVED OR CONDITIONALLY APPROVED TENTATIVE MAP, IF
ANY; THAT THE MONUMENTS OF THE CHARACTER AND LOCATION ARE IN PLACE OR WILL BE IN
PLACE WITHIN TWELVE MONTHS FROM THE FILING DATE OF THIS MAP; THAT SAID MONUMENTS ARE
SUFFICIENT TO ENABLE THE SURVEY TO BE RETRACED AND THAT TIE NOTES TO ALL CENTERLINE
MONUMENTS SHOWN AS "TO BE SET" WILL BE ON FILE IN THE OFFICE OF THE CITY ENGINEER WITHIN
TWELVE MONTHS FROM THE FILING DATE SHOWN HEREON.

PRELIMINARY
PASCAL APOTHELOZ
L.S. NO. 7734
DATE _____



CITY ENGINEER'S CERTIFICATE

I HEREBY CERTIFY THAT I HAVE EXAMINED THIS MAP AND THAT IT CONFORMS SUBSTANTIALLY TO
THE TENTATIVE MAP AND ALL APPROVED ALTERATIONS THEREOF; THAT ALL PROVISIONS OF THE
LOCAL SUBDIVISION ORDINANCES OF THE CITY OF GLENDALE, APPLICABLE AT THE TIME OF
APPROVAL OF THE TENTATIVE MAP HAVE BEEN COMPLIED WITH, AND THAT I AM SATISFIED THAT
THIS MAP IS TECHNICALLY CORRECT WITH RESPECT TO CITY RECORDS.

DATE
CITY ENGINEER
CITY OF GLENDALE
LS _____

CITY CLERK'S CERTIFICATE

I HEREBY CERTIFY THAT THE CITY COUNCIL OF THE CITY OF GLENDALE BY RESOLUTION ADOPTED

APPROVED THE ATTACHED MAP FOR CONDOMINIUM PURPOSES AND
ACCEPTED THE IRREVOCABLE OFFER OF DEDICATION AS SHOWN IN THE OWNERSHIP CERTIFICATE.

DATE
CITY CLERK, CITY OF GLENDALE

SPECIAL ASSESSMENTS CERTIFICATE

I HEREBY CERTIFY THAT ALL SPECIAL ASSESSMENTS LEVIED UNDER THE JURISDICTION OF THE CITY
OF GLENDALE TO WHICH THE LAND INCLUDED IN THE WITHIN SUBDIVISION OR ANY PART THEREOF IS
SUBJECT, AND WHICH MAY BE PAID IN FULL, HAVE BEEN PAID IN FULL.

DATE
CITY CLERK, CITY OF GLENDALE

COUNTY ENGINEER'S CERTIFICATE

I HEREBY CERTIFY THAT I HAVE EXAMINED THIS MAP, THAT IT COMPLIES WITH ALL PROVISIONS OF
STATE LAW APPLICABLE AT THE TIME OF APPROVAL OF THE TENTATIVE MAP; AND THAT I AM
SATISFIED THAT THIS MAP IS TECHNICALLY CORRECT IN ALL RESPECTS NOT CERTIFIED BY THE CITY
ENGINEER.

COUNTY ENGINEER

BY _____
DEPUTY

DATE: _____ L.S. NO. _____
EXPIRES: _____

PLANNING DIRECTOR'S CERTIFICATE

I HEREBY CERTIFY THAT I HAVE EXAMINED THIS MAP, THAT IT CONFORMS SUBSTANTIALLY TO THE
TENTATIVE MAP AND ALL APPROVED ALTERATIONS THEREOF. THAT ALL PROVISIONS OF APPLICABLE
SUBDIVISION ORDINANCES OF THE CITY OF GLENDALE HAVE BEEN COMPLIED WITH.

DATE
PLANNING DIRECTOR,
CITY OF GLENDALE

I HEREBY CERTIFY THAT ALL CERTIFICATES HAVE BEEN FILED AND DEPOSITS HAVE BEEN MADE THAT
ARE REQUIRED UNDER THE PROVISIONS OF SECTION 66492 AND 66493 OF THE SUBDIVISION MAP
ACT.

EXECUTIVE OFFICER, BOARD OF SUPERVISORS OF THE COUNTY OF LOS ANGELES, STATE OF
CALIFORNIA.

BY _____
DEPUTY
DATE _____

CONDOMINIUM NOTE

THIS SUBDIVISION IS APPROVED AS A CONDOMINIUM PROJECT FOR 28 UNITS, WHEREBY THE OWNERS
OF THE UNITS OF AIR SPACE WILL HOLD AN UNDIVIDED INTEREST IN THE COMMON AREAS THAT WILL,
IN TURN, PROVIDE THE NECESSARY ACCESS AND UTILITY EASEMENTS FOR THE UNITS.

SIGNATURE OMISSION NOTES

UNDER THE PROVISIONS OF SECTION 66436(a)(3)(A)(i–VIII) OF THE SUBDIVISION MAP ACT, THE SIGNATURES OF THE FOLLOWING HAVE BEEN OMITTED AS THEIR INTERESTS ARE SUCH THAT THEY CANNOT RIPEN INTO A FEE TITLE AND SAID SIGNATURES ARE NOT REQUIRED BY THE LOCAL AGENCY:

TITLE INSURANCE AND TRUST COMPANY, A CORPORATION, HOLDER OF EASEMENTS FOR POLE LINE PURPOSES, AS DISCLOSED BY DOCUMENTS RECORDED FEBRUARY 23, 1923 AS INSTRUMENT NO. 926, IN BOOK 1851, PAGE 292, RECORDED FEBRUARY 21, 1923 AS INSTRUMENT NO. 681, IN BOOK 1904, PAGE 229, RECORDED APRIL 19, 1923 AS INSTRUMENT NO. 1261, IN BOOK 2189, PAGE 82, RECORDED JUNE 12, 1924 AS INSTRUMENT NO. 248, IN BOOK 3166, PAGE 258, RECORDED JANUARY 14, 1925 AS INSTRUMENT NO. 983, IN BOOK 3821, PAGE 345, RECORDED APRIL 10, 1925 AS INSTRUMENT NO. 251, IN BOOK 3980, PAGE 63, RECORDED MAY 1, 1925 AS INSTRUMENT NO. 244, IN BOOK 3946, PAGE 333, RECORDED JULY 11, 1928 AS INSTRUMENT NO. 548, IN BOOK 7115, PAGE 160, RECORDED APRIL 12, 1927 AS INSTRUMENT NO. 1944, IN BOOK 4784, PAGE 210, RECORDED APRIL 12, 1927 AS INSTRUMENT NO. 1943, IN BOOK 4784, PAGE 211, RECORDED MARCH 21, 1927 AS INSTRUMENT NO. 1198, IN BOOK 4769, PAGE 232, RECORDED SEPTEMBER 21, 1927 AS INSTRUMENT NO. 1288, IN BOOK 7021, PAGE 316, AND RECORDED OCTOBER 31, 1927 AS INSTRUMENT NO. 1054, IN BOOK 6753, PAGE 336, ALL OF OFFICIAL RECORDS OF LOS ANGELES COUNTY.

TITLE INSURANCE AND TRUST COMPANY, A CORPORATION, HOLDER OF EASEMENTS FOR PUBLIC UTILITY PURPOSES, AS DISCLOSED BY DOCUMENTS RECORDED JULY 11, 1925 AS INSTRUMENT NO. 199, IN BOOK 4477, PAGE 135, OF OFFICIAL RECORDS LOS ANGELES COUNTY.

CHARLES COLLINS AND LOTTA T. COLLINS HOLDERS OF AN EASEMENT FOR PUBLIC UTILITIES PURPOSES, AS DISCLOSED BY DOCUMENT RECORDED JANUARY 5, 1930 AS INSTRUMENT NO. 545, IN BOOK 6446, PAGE 299, OF OFFICIAL RECORDS OF LOS ANGELES COUNTY.

SOUTHERN CALIFORNIA TELEPHONE COMPANY, A CORPORATION, HOLDER OF EASEMENTS FOR POLE LINES PURPOSES, AS DISCLOSED BY DOCUMENTS RECORDED AUGUST 31, 1939 AS INSTRUMENT NO. 1184, IN BOOK 16878, PAGE 103, OF OFFICIAL RECORDS OF LOS ANGELES COUNTY.

COUNTY OF LOS ANGELES, HOLDER OF EASEMENTS FOR SLOPE PURPOSES, AS DISCLOSED BY DOCUMENTS RECORDED DECEMBER 3, 1968 AS INSTRUMENT NO. 3344, IN BOOK D–4213, PAGE 479 AND RECORDED JANUARY 30, 1969 AS INSTRUMENT NOS. 1613 AND 1640, ALL OF OFFICIAL RECORDS, RECORDS OF LOS ANGELES COUNTY.

SOUTHERN CALIFORNIA EDISON COMPANY, A CORPORATION, ITS SUCCESSORS AND ASSIGNS HOLDER OF EASEMENTS FOR PUBLIC UTILITY PURPOSES, AS DISCLOSED BY DOCUMENTS RECORDED JULY 1, 1953 AS INSTRUMENT NO. 2525, IN BOOK 42106, PAGE 86, RECORDED JULY 27, 2006 AS INSTRUMENT NO. 06–1667020, RECORDED MAY 16, 2013 AS INSTRUMENT NO. 2013–0736428, AND AN EASEMENT FOR THE TRANSMISSION OF ELECTRICAL ENERGY, AS DISCLOSED BY DOCUMENT RECORDED NOVEMBER 9, 1971 AS INSTRUMENT NO. 2301, ALL OF OFFICIAL RECORDS OF LOS ANGELES COUNTY.

CITY OF GLENDALE, A MUNICIPAL CORPORATION, HOLDER OF AN EASEMENT FOR PUBLIC UTILITY PURPOSES, AS DISCLOSED BY DOCUMENTS RECORDED APRIL 14, 1972 AS INSTRUMENT NO. 5074, JUNE 14, 2004 AS INSTRUMENT 04–1510030 AND JULY 27, 2006 AS INSTRUMENT NO. 06–1667020, EASEMENTS FOR SEWER LINE PURPOSES, AS DISCLOSED BY DOCUMENT RECORDED JUNE 14, 2004 AS INSTRUMENT 04–1510030, EASEMENTS FOR PUBLIC INGRESS, EGRESS AND ACCESS PURPOSES, AS DISCLOSED BY DOCUMENT RECORDED JANUARY 18, 2017 AS INSTRUMENT NO. 2017–072489 AND AMENDED BY DOCUMENT RECORDED MARCH 28, 2017 AS INSTRUMENT NO. 20170341269, ALL OF OFFICIAL RECORDS OF LOS ANGELES COUNTY.

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF _____

COUNTY OF _____

ON _____ BEFORE ME, _____

A NOTARY PUBLIC, PERSONALLY APPEARED _____, WHO PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAWS OF THE STATE OF CALIFORNIA THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

WITNESS MY HAND:

SIGNATURE _____ MY PRINCIPAL PLACE OF BUSINESS IS IN _____ COUNTY

(NAME PRINTED) MY COMMISSION EXPIRES _____
MY COMMISSION NUMBER _____

TRACT NO. 73651
IN THE CITY OF GLENDALE, COUNTY OF LOS ANGELES,
STATE OF CALIFORNIA
FOR CONDOMINIUM PURPOSES

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF _____

COUNTY OF _____

ON _____ BEFORE ME, _____

A NOTARY PUBLIC, PERSONALLY APPEARED _____, WHO PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

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SIGNATURE _____ MY PRINCIPAL PLACE OF BUSINESS IS IN _____ COUNTY

(NAME PRINTED) MY COMMISSION EXPIRES _____
MY COMMISSION NUMBER _____

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF _____

COUNTY OF _____

ON _____ BEFORE ME, _____

A NOTARY PUBLIC, PERSONALLY APPEARED _____, WHO PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

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STATE OF _____

COUNTY OF _____

ON _____ BEFORE ME, _____

A NOTARY PUBLIC, PERSONALLY APPEARED _____, WHO PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

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SIGNATURE _____ MY PRINCIPAL PLACE OF BUSINESS IS IN _____ COUNTY

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MY COMMISSION NUMBER _____

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STATE OF _____

COUNTY OF _____

ON _____ BEFORE ME, _____

A NOTARY PUBLIC, PERSONALLY APPEARED _____, WHO PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR AUTHORIZED CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

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WITNESS MY HAND:

SIGNATURE _____ MY PRINCIPAL PLACE OF BUSINESS IS IN _____ COUNTY

(NAME PRINTED) MY COMMISSION EXPIRES _____
MY COMMISSION NUMBER _____

SHEET 3 OF 5 SHEETS

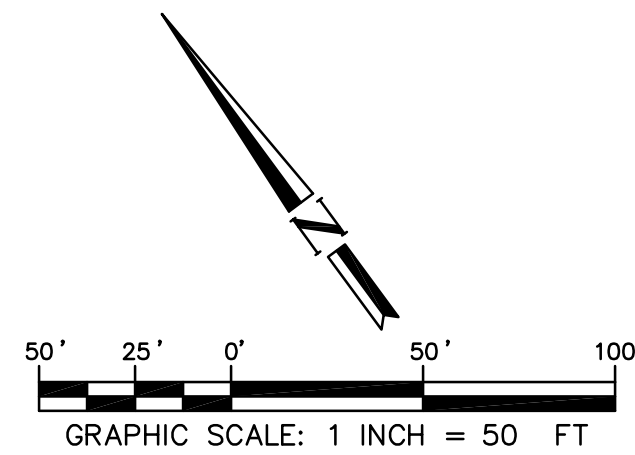
D1 INDICATES CALTRANS DIRECTOR'S DEED RECORDED
AUGUST 8, 1974 AS INST. NO. 3087, O.R.

D2 INDICATES RESOLUTION NO. 06-98 RECORDED
JULY 27, 2006 AS INST. NO. 06-1667020, O.R.

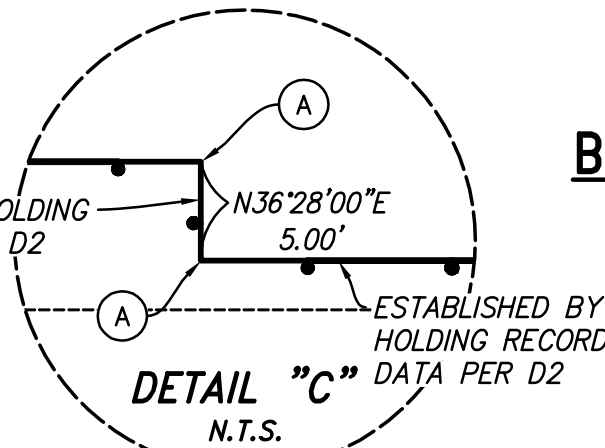
D3 INDICATES DEED 42009, RECORDED JANUARY 7,
1970 AS INST. NO. 190 IN BK. D4600, PGS.
506-508, O.R.

CGTB INDICATES CITY OF GLENDALE TIE BOOK.

PWFB INDICATES PUBLIC WORKS FIELD BOOK.



****SEE SHEET 3 FOR
EASEMENT ESTABLISHMENT****



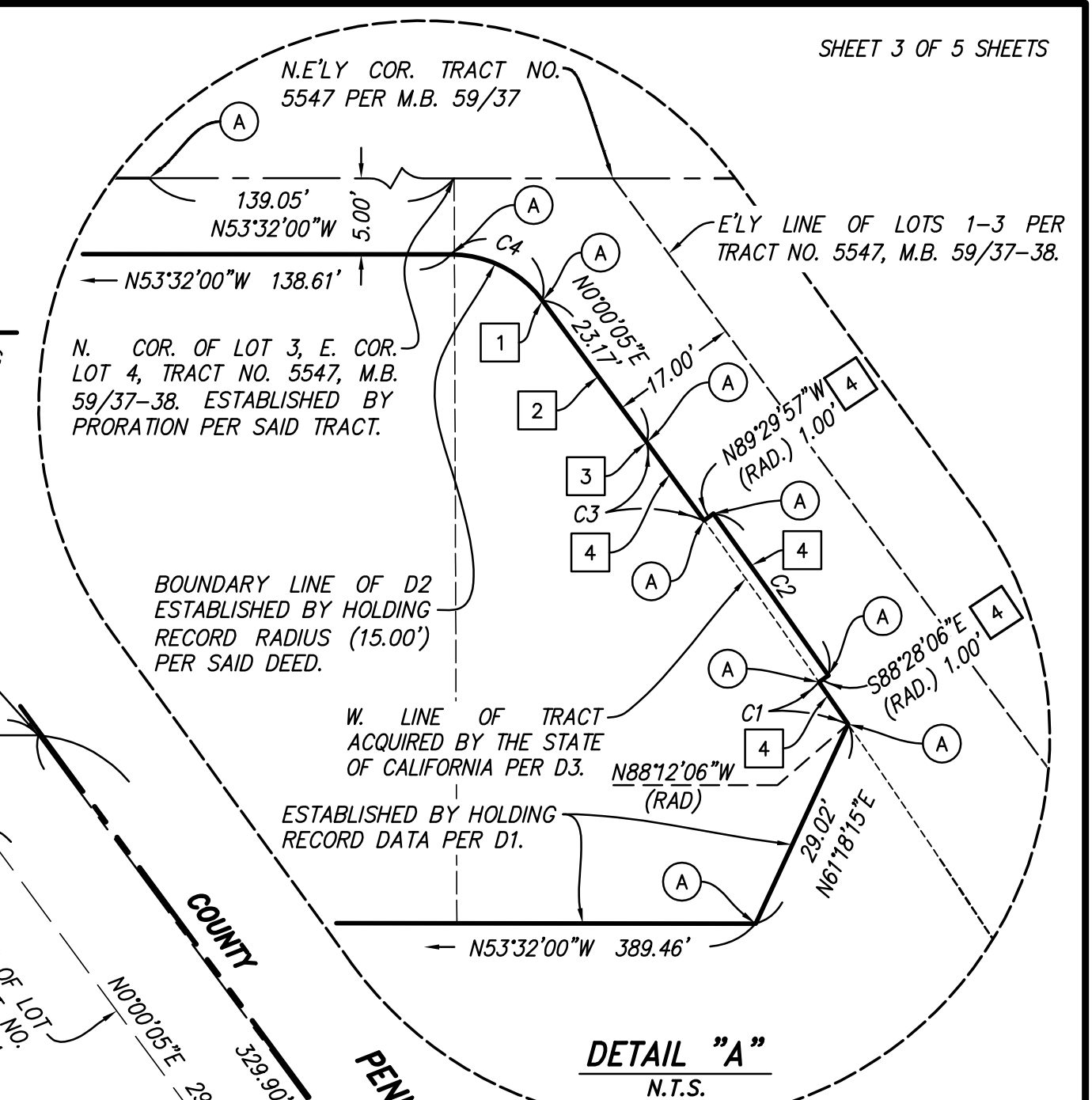
ESTABLISHED BY HOLDING
RECORD DATA PER D2

820.59' (BASIS OF BEARINGS)

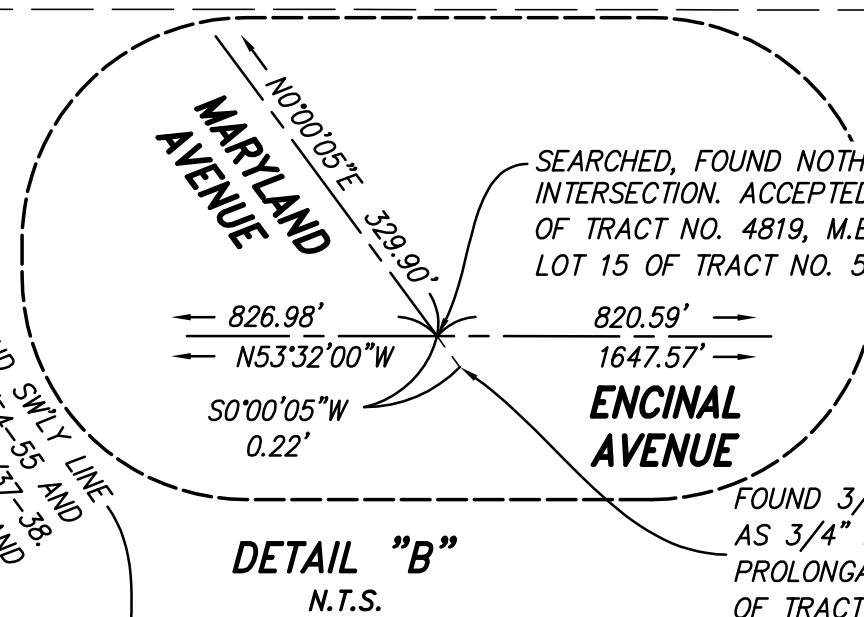
BOUNDARY ESTABLISHMENT

LEGEND

 BOUNDARY OF THE LAND BEING
SUBDIVIDED BY THIS MAP.



DETAIL "A"
N.T.S.



SEARCHED, FOUND NOTHING. ESTABLISHED BY
INTERSECTION. ACCEPTED AS SW CORNER LOT 10
OF TRACT NO. 4819, M.B. 52/91 AND N. CORNER
LOT 15 OF TRACT NO. 5547, M.B. 59/37-38

FOUND 3/4" IRON PIPE & TAG, ILLEGIBLE, DOWN 0.7', ACCEPTED AS 3/4" IRON PIPE & TAG STAMPED "LS 7048", ON SOUTHERLY PROLONGATION OF E'LY LINE OF MARYLAND AVE. AND W'LY LINE OF TRACT NO. 4819, M.B. 52/91 PER CGTB 200/27-28

E. COR. OF LOT 11, TRACT NO. 5547, M.B.
- 59/37-38, ESTABLISHED BY PRORATION
PER SAID TRACT.

SEE DETAIL "C"—

AVENUE

BOUN
ESTA
RECO

SE. LINE OF LOT 4, NW. LINE OF LOT 3 TRACT
NO. 5547, M.B. 59/37-38. ESTABLISHED BY
RECORD ANGLE FROM NE'LY LINES OF LOTS 3
THROUGH 15 PER SAID TRACT.

SW'LY LINE OF D1 ESTABLISHED BY
HOLDING RECORD ANGLE PER SAID DEED.

FOOTHILL FREEWAY (ROUTE 210)

SEE DETAIL "A"

W. LINE OF TRACT
ACQUIRED BY THE
STATE OF CALIFORNIA
PER D3

E'LY LINE LOTS 1-3,
TRACT NO. 5547,
M.B. 59/37-38

Q OF TRACT ACQUIRED BY
THE STATE OF CALIFORNIA
PER D3 (R=1500' D3)

FOUND LEAD, TACK & TAG STAMPED "RE
13425", FLUSH PER CGTB 365/74.
ACCEPTED AS INTERSECTION OF MONTROSE
AVE. AND OLD ALIGNMENT OF PENNSYLVANIA
AVE. (SURVEY CENTERLINE) PER LOS
ANGELES COUNTY PWFB 1921/2185.

**MONTROSE
AVENUE**

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C1	0°16'00"	1450.00'	6.75'
C2	1°01'51"	1451.00'	26.11'
C3	0°29'58"	1450.00'	12.64'
C4	53°32'05"	15.00'	14.02'
C5	19°13'16"	211.47'	70.94'
C6	19°13'16"	237.00'	79.51'

BOUNDARY ESTABLISHMENT NOTES

1. ESTABLISHED POINT OF TANGENCY BY INTERSECTION BETWEEN 15.00' RADIUS CURVE PER D2 AND THE W. LINE OF D3.
2. W. LINE OF D3, ESTABLISHED BY SAID DEED.
3. BC OF THE W. LINE OF D3, ESTABLISHED BY RECORD ANGLES AND DISTANCES PER SAID DEED.
4. BOUNDARY LINES OF D1, ESTABLISHED BY RECORD DISTANCES AND ANGLES PER SAID D1.
5. N. COR. OF LOT 3, E. COR. LOT 4, TRACT NO. 5547, M.B. 59/37-38. ESTABLISHED BY PRORATION PER SAID TRACT.

6 S'LY R/W OF ENCINAL AVE. ESTABLISHED BY RECORD DISTANCES AND ANGLES PER
RESOLUTION NO. 06-98, RECORDED 7/27/2016 AS INSTRUMENT NO. 06-1667020,
OF OFFICIAL RECORDS.

MONUMENT NOTE

- (A) 2" IRON PIPE TAGGED "LS 7734" TO BE SET, FLUSH.

POINT FALLS ON SEWER
MANHOLE. ESTABLISHED BY
FOUND TIES (4) PER CGTB
155/7

BASIS OF BEARINGS

THE BEARINGS SHOWN HEREON ARE BASED ON THE
CENTERLINE OF ALTURA AVENUE AS SHOWN ON
TRACT NO. 38594, FILED IN BOOK 1015, PAGES 37
AND 38 OF MAPS, BEING NORTH 53°32'00" WEST

IN THE CITY OF GLENDALE, COUNTY OF LOS ANGELES,
STATE OF CALIFORNIA
FOR CONDOMINIUM PURPOSES
EASEMENT ESTABLISHMENT N. COR. OF LOT
5547, M.P. 50/37-3

EASEMENT ESTABLISHMENT

N. COR. OF LOT 6, TRACT NO. 5547, M.B. 59/37-38. ESTABLISHED BY PRORATION PER SAID TRACT.

LOT 1
73,890 SQ. FT.

ENCINAL AVENUE

PENNSYLVANIA AVENUE

SE. LINE OF LOT 6, TRACT NO. 5547, M.B. 59/37-38. ESTABLISHED BY RECORD ANGLE FROM N'LY LINE OF SAID TRACT.

SEE DETAILS "E" & "F" ON SHEET 5 FOR EASEMENTS I, J, AND M

SEE DETAIL "A" ON SHEET 5 FOR EASEMENT H

SEE DETAIL "F" ON SHEET 5 FOR EASEMENT M

SEE DETAILS "B", "C", & "D" ON SHEET 5 FOR EASEMENTS F, H & K

SEE DETAIL "A" SHEET 3

Graphic Scale: 40' 20' 0'

A EASEMENT OF TITLE INSURANCE AND TRUST COMPANY, A CORPORATION FOR POLE LINE PURPOSES RECORDED FEBRUARY 23, 1923 AS INSTRUMENT NO. 926, IN BOOK 1851, PAGE 292, JUNE 12, 1924 AS INSTRUMENT NO. 248, IN BOOK 3166, PAGE 258, JANUARY 14, 1925 AS INSTRUMENT NO. 983, IN BOOK 3821, PAGE 345, APRIL 10, 1925 AS INSTRUMENT NO. 251, IN BOOK 3980, PAGE 63, MAY 1, 1925 AS INSTRUMENT NO. 244, IN BOOK 3946, PAGE 333, JULY 11, 1925 AS INSTRUMENT NO. 199, IN BOOK 4477, PAGE 135, JULY 11, 1928 AS INSTRUMENT NO. 548, IN BOOK 7115, PAGE 160, APRIL 12, 1927 AS INSTRUMENT NO. 1944, IN BOOK 4784, PAGE 210, APRIL 12, 1927 AS INSTRUMENT NO. 1943, IN BOOK 4784, PAGE 211, OCTOBER 31, 1927 AS INSTRUMENT NO. 1054, IN BOOK 6753, PAGE 336, ALL OF OFFICIAL RECORDS.

B EASEMENT OF CHARLES COLLINS AND LOTTA T. COLLINS FOR PUBLIC UTILITY PURPOSES RECORDED JANUARY 5, 1930 AS INSTRUMENT NO. 545, IN BOOK 6446, PAGE 299, OFFICIAL RECORDS.

C EASEMENT OF SOUTHERN CALIFORNIA TELEPHONE COMPANY, A CORPORATION FOR POLE LINE PURPOSES RECORDED AUGUST 31, 1939 AS INSTRUMENT NO. 1184, IN BOOK 16878, PAGE 103, OFFICIAL RECORDS.

D EASEMENT OF SOUTHERN CALIFORNIA EDISON COMPANY, A CORPORATION FOR POLE LINE PURPOSES RECORDED JULY 1, 1953 AS INSTRUMENT NO. 2525, IN BOOK 42106, PAGE 86, OFFICIAL RECORDS.

E EASEMENT OF COUNTY OF LOS ANGELES FOR SLOPE PURPOSES RECORDED DECEMBER 3, 1968 AS INSTRUMENT NO. 3344, IN BOOK D-4213, PAGE 479, OFFICIAL RECORDS. (SAID EASEMENT IS INDETERMINATE IN NATURE)

[F] EASEMENT OF COUNTY OF LOS ANGELES FOR SLOPE EASEMENT FOR CUTS AND/OR FILLS PURPOSES RECORDED JANUARY 30, 1969 AS INSTRUMENT NOS. 1613 AND 1640, BOTH OF OFFICIAL RECORDS.

[G] EASEMENT OF CITY OF GLENDALE, A MUNICIPAL CORPORATION FOR PUBLIC UTILITY PURPOSES RECORDED APRIL 14, 1972 AS INSTRUMENT NO 5074, OFFICIAL RECORDS.

[H] EASEMENT OF SOUTHERN CALIFORNIA EDISON COMPANY, A CORPORATION, ITS SUCCESSORS AND ASSIGNS FOR PUBLIC UTILITY PURPOSES RECORDED MAY 16, 2013 AS INSTRUMENT NO. 2013-0736428, OFFICIAL RECORDS.

[I] EASEMENT OF CITY OF GLENDALE FOR PUBLIC INGRESS, EGRESS AND ACCESS PURPOSES RECORDED JANUARY 18, 2017 AS INSTRUMENT NO. 2017-072489, AND RECORDED MARCH 28, 2017 AS INSTRUMENT NO. 20170341269, BOTH OF OFFICIAL RECORDS.

[J] EASEMENT OF SOUTHERN CALIFORNIA EDISON FOR PUBLIC UTILITY PURPOSES, CONTAINED IN RESOLUTION NO. 04-8, RECORDED JUNE 14, 2004 AS INSTRUMENT NO. 04-1510030, OFFICIAL RECORDS AND AMENDED BY RESOLUTION NO. 04-87, RECORDED JULY 27, 2016 AS INSTRUMENT NO. 06-1667020 OF OFFICIAL RECORDS.

[K] EASEMENT OF SOUTHERN CALIFORNIA EDISON COMPANY FOR THE TRANSMISSION OF ELECTRICAL ENERGY PURPOSES, RECORDED NOVEMBER 9, 1971 AS INSTRUMENT NO. 2301, OFFICIAL RECORDS.

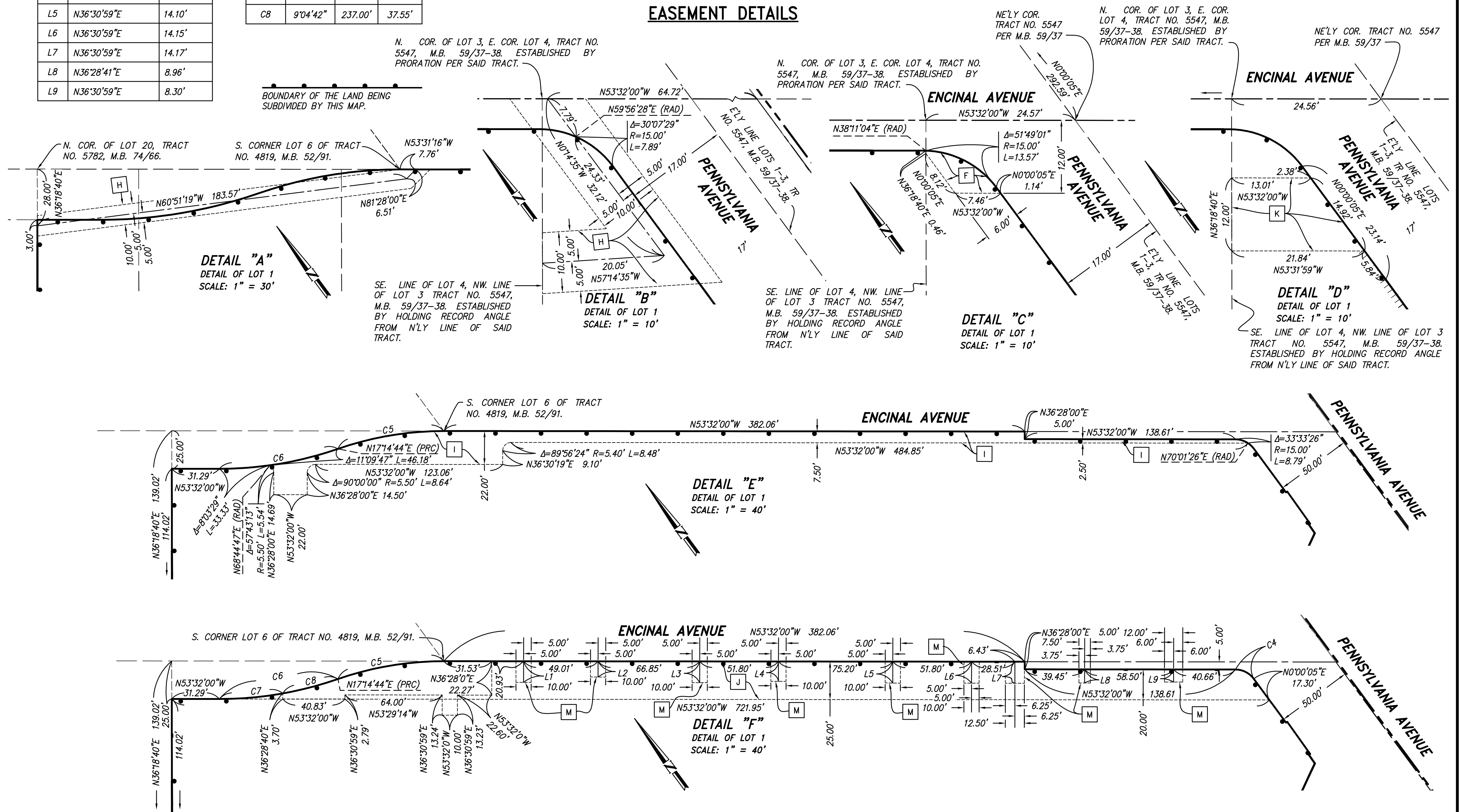
[L] EASEMENT TO THE CITY OF GLENDALE FOR SEWER PURPOSES DEDICATED TO THE CITY OF GLENDALE HEREON.

[M] EASEMENT TO CRESCENTA VALLEY WATER DISTRICT FOR WATER PIPELINE, APPURTENANCES AND ACCESS PURPOSES DEDICATED HEREON.

EASEMENT IN FAVOR OF CVWD IS FOR ACCESS, MAINTENANCE AND REPAIR OF CVWD PIPELINES AND APPURTENANCES REPAIR AND/OR REPLACEMENT OF SURFACE IMPROVEMENTS OTHER THAN ASPHALT CONCRETE PAVEMENT WILL BE THE RESPONSIBILITY OF THE UNDERLYING FEE OWNER OR THE HOMEOWNER'S ASSOCIATION.

CURVE TABLE			
CURVE	DELTA	RADIUS	LENGTH
C4	53°32'05"	15.00'	14.02'
C5	19°13'16"	211.47'	70.94'
C6	19°13'16"	237.00'	79.51'
C7	10°08'34"	237.00'	41.95'
C8	9°04'42"	237.00'	37.55'

EASEMENT DETAILS



Crescenta Valley Water District

Design and Construction Schedule for FY 18/19

Project	July					August				September				October					November				December					January				February				March				April					May				June																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
	2	9	16	23	30	6	13	20	27	3	10	17	24	1	8	15	22	29	5	12	19	26	3	10	17	24	31	7	14	21	28	4	11	18	25	4	11	18	25	1	8	15	22	29	6	13	20	27	3	10	17	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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