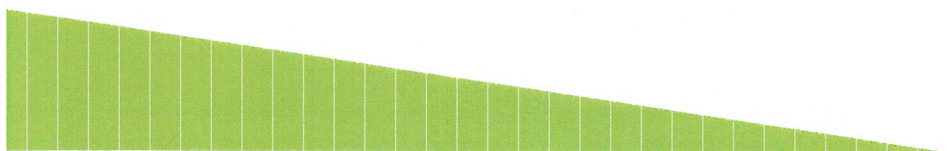



# Bow mar meter replacement and automatic meter reading project

Project summary





# Table of contents

- ▶ Summary of Project
  - ▶ Section 1 - Overall Bow Mar map showing project progression
  - ▶ section 2 - Project completion timeline
  - ▶ section 3 - Daily reports by percent complete i.e. 50%, 75%, 100%
  - ▶ Section 4 - Installation contractor's pay application
  - ▶ Section 5 - Bow Mar pay request - totals include materials and labor
  - ▶ Section 6 - Pictures of field work
- 



# **Town of Bow Mar Automatic Meter Reading and Meter Replacement/Rehabilitation Project**

## **Summary of Project Completion**

Updated and replaced existing meters to an Automatic Meter Reading system and replaced inflexible, outdated customer billing system which allows more accurate readings for both the customers and Bow Mar Water and Sanitation District.

**Organizations/Contractors who worked on project:** Platte Canyon Water and Sanitation District, Dana Kepner, and Levi Contractors

## **Project Overview**

The program entailed rehabilitation/replacement of 293 existing meters. The new meters provide a more accurate accounting of the individual customer usage. This allows the district to better determine the amount of water which is being lost through leaks. The new meters are radio-read, which save the district time and money, related to the actual reading of the meters. The new meters allow the district to more accurately account for the effects of various conservation measures and programs. The new billing system includes an Automatic Meter Reading Sensus Interface that will allow for the new meters to be read.

## **Project Scope of Work**

The meter replacement/rehabilitation program replaced 233 meters and rehabilitated 60 existing meters for automatic meter reading.

### **Task 1 – Meter Rehabilitation**

The rehabilitation of the 60 meters included replacing the meter register with a new register and a MXU device that allows for automatic meter reading along with a 12” plastic inner lid for the MXU.

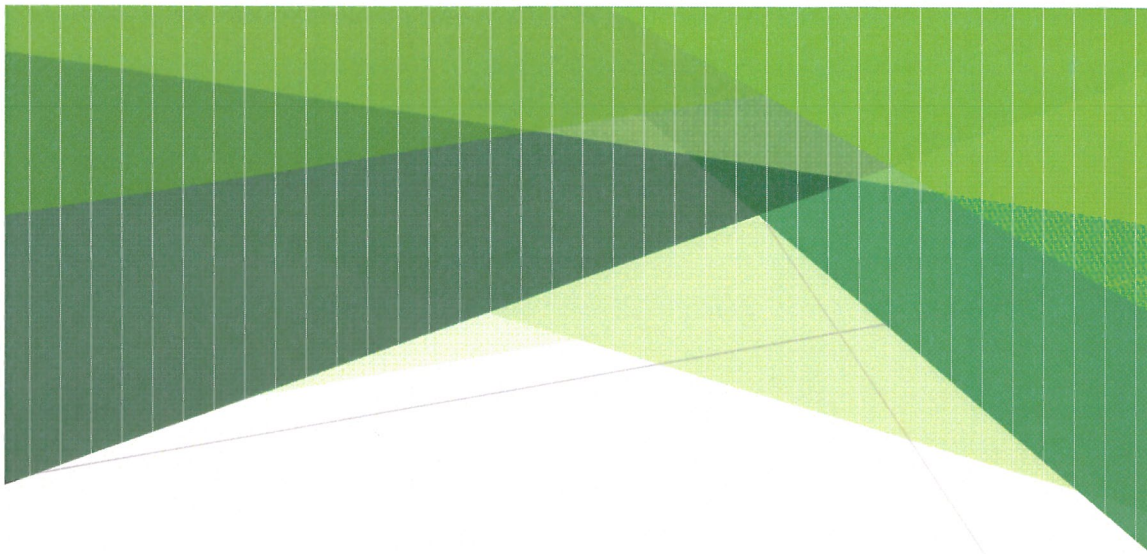
### **Task 2 – Meter Replacement**

The replacement of the 233 meters involved replacing the entire meter, a meter yolk or re-setter, and a MXU device for automatic meter reading and all miscellaneous appurtenances to install the yolk.

**Task 3 – Automatic Meter Reading Equipment**

The automatic meter reading system includes a programming device, a hand-held receiver and software that will automatically read all 293 meters by radio and download readings to the office billing system.

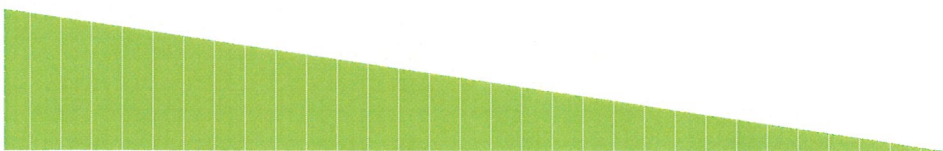
The District contracted with Levi Contractors for the installment of the meters and Dana Kepner will supplied the parts for the meters. A District employee inspected the installation of the meters.



# Overall Bow Mar map

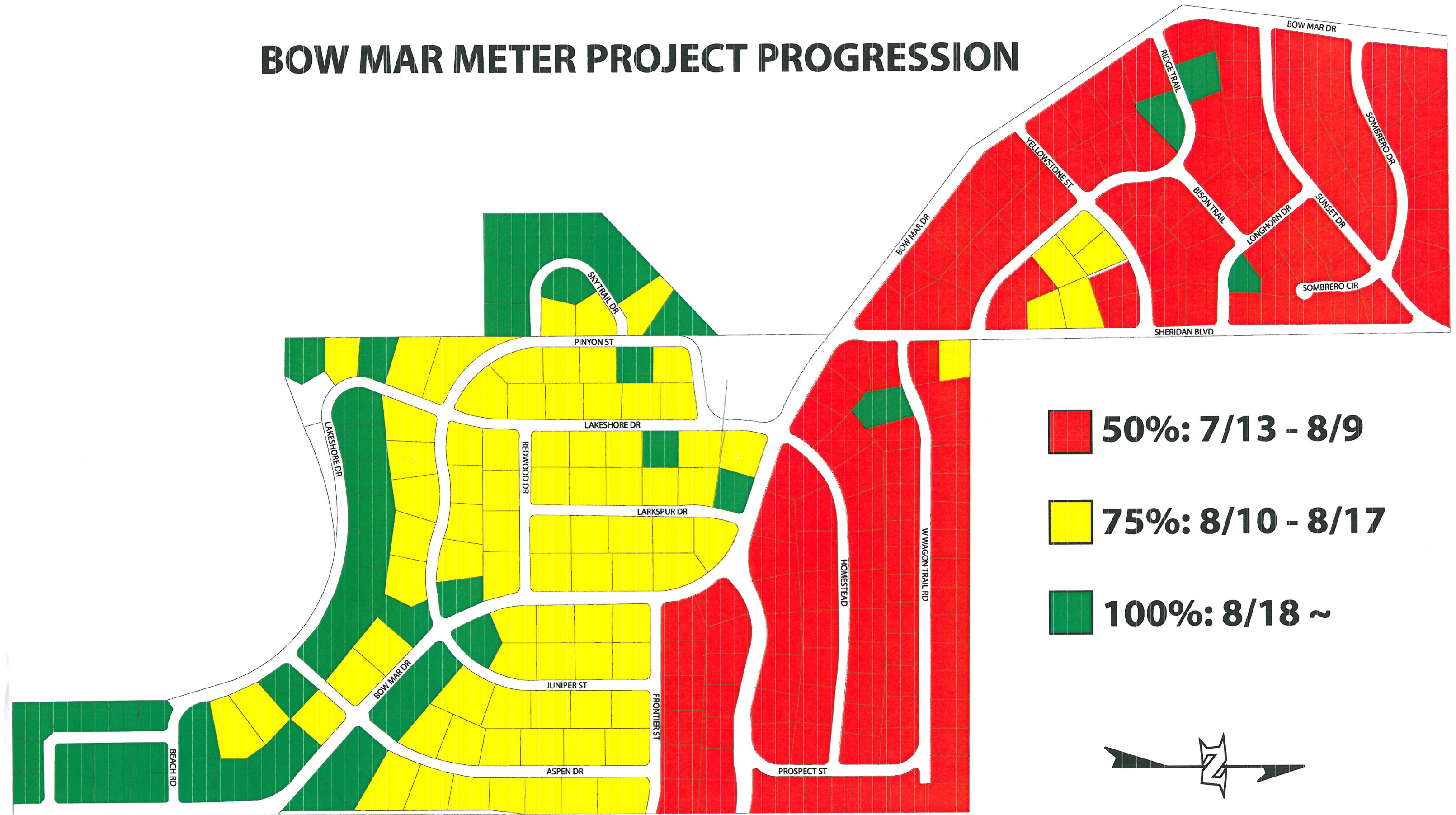
50%, 75% and 100% progress

Section 1

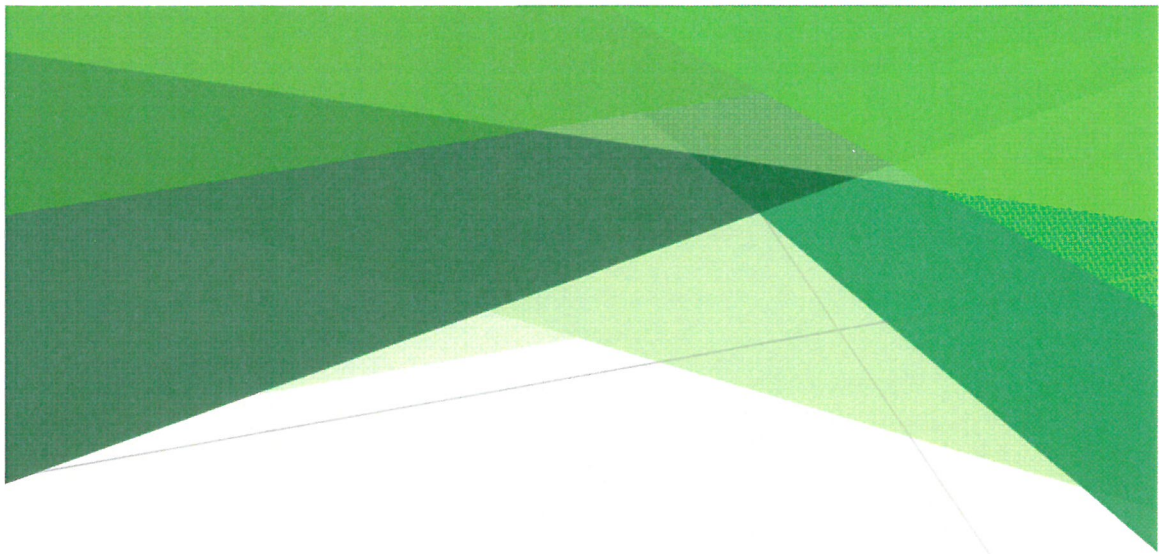




# BOW MAR METER PROJECT PROGRESSION







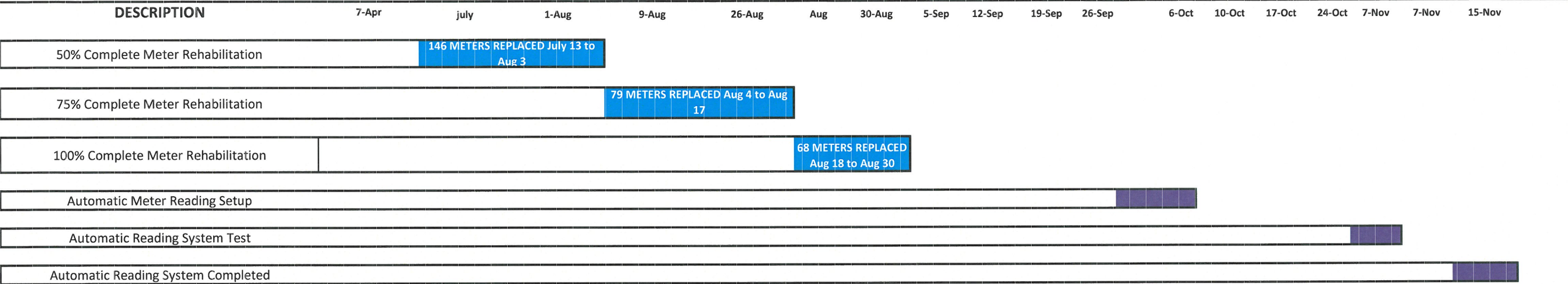
# Project completion time line

Construction and payment

Section 2

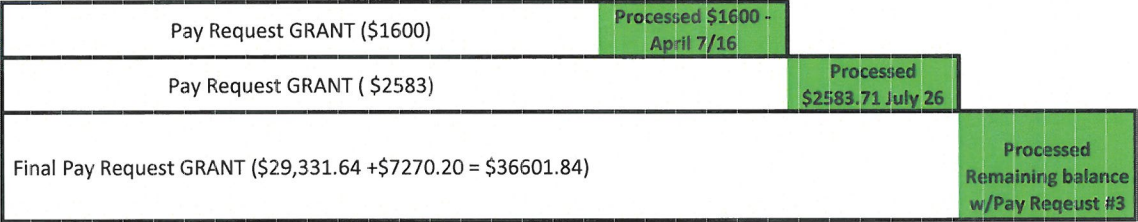


BOW MAR AUTOMATIC METER READING & METER REPLACEMENT/REHABILITATION PROJECT (Timeline)

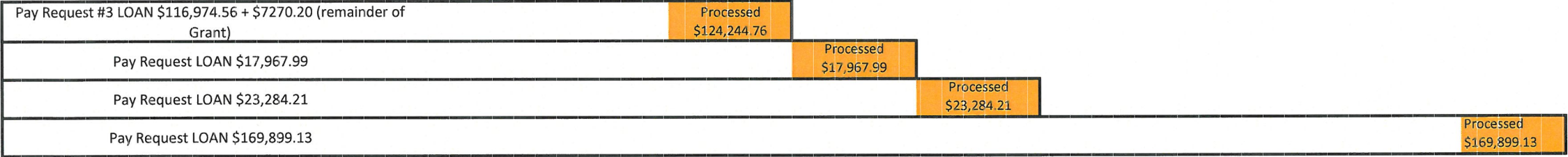


PAY REQUEST SUBMITTAL

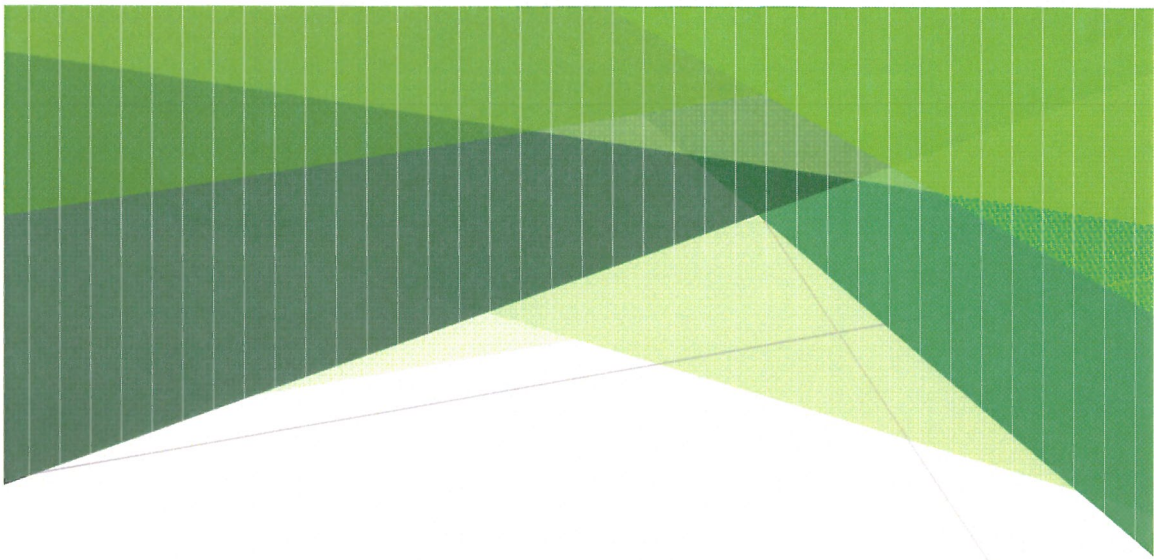
Pay Request Grant POGGI PDAA 2016 0753    Total  
Grant \$36,601.84



Pay Request Loan CT2016-2516







# Daily reports

Summary of construction progress

Section 3









Prepared by: Tony Cocozzella \_\_\_\_\_  
Reviewed by: \_\_\_\_\_



Prepared by: Tony Cocozzella \_\_\_\_\_  
Reviewed by: \_\_\_\_\_



[illegible]

Prepared by: Tony Cocozzella  
Reviewed by: \_\_\_\_\_



[illegible]

Prepared by: Tony Cocozzella  
Reviewed by: \_\_\_\_\_

[illegible]

Reviewed by: \_\_\_\_\_





<b>Client:</b> Bow Mar Water & San. Dist.		<b>Project:</b> Meter Upgrades		<b>Project #:</b> A6-091	
<b>Date:</b> 7/22 /16		<b>Weather/temp:</b> 95		<b>Time arrived:</b> 3 visits <b>a day</b>	
				<b>Time depart:</b> 3 visits <b>a day</b>	
<b>Observer:</b> Cocozzella/Quintana				<b>Report #</b> 1	
<b>Contractor</b> Levi Contractors				<b>Contractor foreman:</b> Bill King	
<b>In attendance on job:</b> 6 crew members				<b>Work being observed:</b>	
<b>Equipment Operating:</b>				<b>Stand-By Equipment:</b>	
No heavy equipment – all work is manual with shovels				None	
<b>Instructions to Contractor:</b> In Writing Verbal					
Each meter installation is unique. Starting out we observed meter pits that required the following:					
Ipearl meter, yoke or resetter and copper pipe with coupling to accommodate the yoke. Each installation uses a radio reader and connection wire.					
<b>Observations:</b>					
Completed 9 meter change outs. Contractor and crew are working according to contract. Some of the change outs required a new yoke					

Prepared by: Tony Cocozzella

Reviewed by:





Prepared by: Tony Cocozzella  
Reviewed by: \_\_\_\_\_



Reviewed by: \_\_\_\_\_



[illegible]

Prepared by: Tony Cocozzella  
Reviewed by: \_\_\_\_\_



Reviewed by: \_\_\_\_\_



Prepared by: Tony Cocozzella  
Reviewed by: \_\_\_\_\_



[illegible]

Prepared by: Tony Cocozzella

Reviewed by: \_\_\_\_\_





[illegible]

Prepared by: Tony Cocozzella

Reviewed by: \_\_\_\_\_



[illegible]

Reviewed by: \_\_\_\_\_

[illegible]

Prepared by: Tony Cocozzella  
Reviewed by: \_\_\_\_\_



Client: Bow Mar Water & San. Dist.		Project: Meter Upgrades		Project #: A6-091	
Date: 8/5/16		Weather/temp: 91		Time arrived: 3 visits a day	
				Time depart: 3 visits a day	
Observer: Cocozzella/Quintana				Report # 1	
Contractor Levi Contractors				Contractor foreman: Bill King	
In attendance on job: 2 crew members				Work being observed:	
Equipment Operating:				Stand-By Equipment:	
No heavy equipment – all work is manual with shovels				None	
<div> <div>Instructions to Contractor:</div> <div>In Writing</div> <div>Verbal</div> </div>					
Each meter installation is unique. Starting out we observed meter pits that required the following:					
Ipearl meter, yoke or resetter and copper pipe with coupling to accommodate the yoke. Each installation uses a radio reader and connection wire.					
Observations:					
Completed 5 meter change outs. Contractor and crew are working according to contract.					
The following addressed were changed to new Ipearl meters: Redwood St. 5150,4800,4901. Bow Mar Dr – 5100,5095. Crew was just 2 men.					

Prepared by: Tony Cocozzella

Reviewed by:





Prepared by: Tony Cocozzella  
Reviewed by: \_\_\_\_\_



[illegible]

Prepared by: Tony Cocozzella

Reviewed by: \_\_\_\_\_



Prepared by: Tony Cocozzella  
Reviewed by: \_\_\_\_\_





[illegible]

Reviewed by: \_\_\_\_\_



Prepared by: Tony Cocozzella  
Reviewed by: \_\_\_\_\_

[illegible]

Prepared by: Tony Cocozzella  
Reviewed by: \_\_\_\_\_



Prepared by: Tony Cocozzella  
Reviewed by: \_\_\_\_\_



Prepared by: Tony Cocozzella  
Reviewed by: \_\_\_\_\_



Prepared by: Tony Cocozzella  
Reviewed by: \_\_\_\_\_





Prepared by: Tony Cocozzella  
Reviewed by: \_\_\_\_\_



Prepared by: Tony Cocozzella  
Reviewed by: \_\_\_\_\_



Prepared by: Tony Cocozzella  
Reviewed by: \_\_\_\_\_





Prepared by: Tony Cocozzella  
Reviewed by: \_\_\_\_\_



Prepared by: Tony Cocozzella  
Reviewed by: \_\_\_\_\_





Prepared by: Tony Cocozzella  
Reviewed by: \_\_\_\_\_



Prepared by: Tony Cocozzella  
Reviewed by: \_\_\_\_\_



Prepared by: Tony Cocozzella  
Reviewed by: \_\_\_\_\_







# Installation contractor's pay application

Section 4



10981 Brighton Rd, Henderson CO 80640 (303) 287-4900 Fax (303) 287-1120

INVOICE #7737

DATE: JULY 29, 2016

BOW MAR WATER AND SANITATION DISTRICT  
C/O ENS CONSULTING, LLC  
1200 S. WADSWORTH BLVD., SUITE 100  
LAKEWOOD, CO 80232

PHONE: 303-670-1406  
FAX: 303-936-9629

RE: CONSTRUCTION OF 2016 REHABILITATION AND REPLACEMENT OF WATER METERS

LEVI JOB #1630 CID: 0446 PAY REQUEST #1

UNIT	QUAN	UOM	DESCRIPTION	UNIT PRICE	CONTRACT AMOUNT	PREV QUAN	PREVIOUS REQUEST	THIS QUAN	THIS REQUEST	TOTAL QUAN	TOTAL TO DATE
------	------	-----	-------------	------------	-----------------	-----------	------------------	-----------	--------------	------------	---------------

**ORIGINAL CONTRACT**

**SCHEDULE 1**

1	55	EA	3/4" IPERL	\$450.00	\$24,750.00		\$0.00	7	\$3,150.00	7	\$3,150.00
2	175	EA	1" IPERL	\$500.00	\$87,500.00		\$0.00	81	\$40,500.00	81	\$40,500.00
3	3	EA	1-1/2" OMNI	\$750.00	\$2,250.00		\$0.00	1	\$750.00	1	\$750.00
4	21	EA	3/4" METER REGISTER	\$475.00	\$9,975.00		\$0.00	4	\$1,900.00	4	\$1,900.00
5	39	EA	1" METER REGISTER	\$525.00	\$20,475.00		\$0.00	17	\$8,925.00	17	\$8,925.00
6	78	EA	FORD COPPERSETTERS	\$625.00	\$48,750.00		\$0.00	21	\$13,125.00	21	\$13,125.00
7	5	EA	FORD RESETTERS	\$85.00	\$425.00		\$0.00	12	\$1,020.00	12	\$1,020.00
8	2	EA	3/4" CURB STOP	\$1,200.00	\$2,400.00		\$0.00		\$0.00	0	\$0.00
9	2	EA	1" CURB STOP	\$1,300.00	\$2,600.00		\$0.00		\$0.00	0	\$0.00
TOTAL SCHEDULE 1					\$199,125.00		\$0.00		\$69,370.00		\$69,370.00

<b>TOTAL ORIGINAL CONTRACT</b>					\$199,125.00		\$0.00		\$69,370.00		\$69,370.00
--------------------------------	--	--	--	--	--------------	--	--------	--	-------------	--	-------------

					\$0.00		\$0.00		\$0.00	0	\$0.00
					\$0.00		\$0.00		\$0.00	0	\$0.00
					\$0.00		\$0.00		\$0.00		\$0.00

<b>REVISED CONTRACT AMOUNT</b>	\$199,125.00
--------------------------------	--------------

<b>WORK COMPLETED</b>				\$69,370.00		\$69,370.00
<b>RETAINAGE 10% OF 50%</b>				(\$6,937.00)		(\$6,937.00)
<b>NET DUE THIS INVOICE</b>				\$62,433.00		\$62,433.00





10981 Brighton Rd, Henderson CO 80640 (303) 287-4900 Fax (303) 287-1120

INVOICE #7747

DATE: SEPTEMBER 13, 2016

BOW MAR WATER AND SANITATION DISTRICT  
C/O ENS CONSULTING, LLC  
1200 S. WADSWORTH BLVD., SUITE 100  
LAKEWOOD, CO 80232

PHONE: 303-670-1406  
FAX: 303-936-9629

RE: CONSTRUCTION OF 2016 REHABILITATION AND REPLACEMENT OF WATER METERS

LEVI JOB #1630 CID: 0446

PAY REQUEST #2

UNIT	QUAN	UOM	DESCRIPTION	UNIT PRICE	CONTRACT AMOUNT	PREV QUAN	PREVIOUS REQUEST	THIS QUAN	THIS REQUEST	TOTAL QUAN	TOTAL TO DATE
------	------	-----	-------------	------------	-----------------	-----------	------------------	-----------	--------------	------------	---------------

**ORIGINAL CONTRACT**

**SCHEDULE 1**

1	55	EA	3/4" IPERL	\$450.00	\$24,750.00	7	\$3,150.00	49	\$22,050.00	56	\$25,200.00
2	175	EA	1" IPERL	\$500.00	\$87,500.00	81	\$40,500.00	88	\$44,000.00	169	\$84,500.00
3	3	EA	1-1/2" OMNI	\$750.00	\$2,250.00	1	\$750.00	2	\$1,500.00	3	\$2,250.00
4	21	EA	3/4" METER REGISTER	\$475.00	\$9,975.00	4	\$1,900.00	15	\$7,125.00	19	\$9,025.00
5	39	EA	1" METER REGISTER	\$525.00	\$20,475.00	17	\$8,925.00	25	\$13,125.00	42	\$22,050.00
6	78	EA	FORD COPPERSETTERS	\$625.00	\$48,750.00	21	\$13,125.00	58	\$36,250.00	79	\$49,375.00
7	5	EA	FORD RESETTERS	\$85.00	\$425.00	12	\$1,020.00	2	\$170.00	14	\$1,190.00
8	2	EA	3/4" CURB STOP	\$1,200.00	\$2,400.00		\$0.00	3	\$3,600.00	3	\$3,600.00
9	2	EA	1" CURB STOP	\$1,300.00	\$2,600.00		\$0.00	2	\$2,600.00	2	\$2,600.00
TOTAL SCHEDULE 1					\$199,125.00		\$69,370.00		\$130,420.00		\$199,790.00

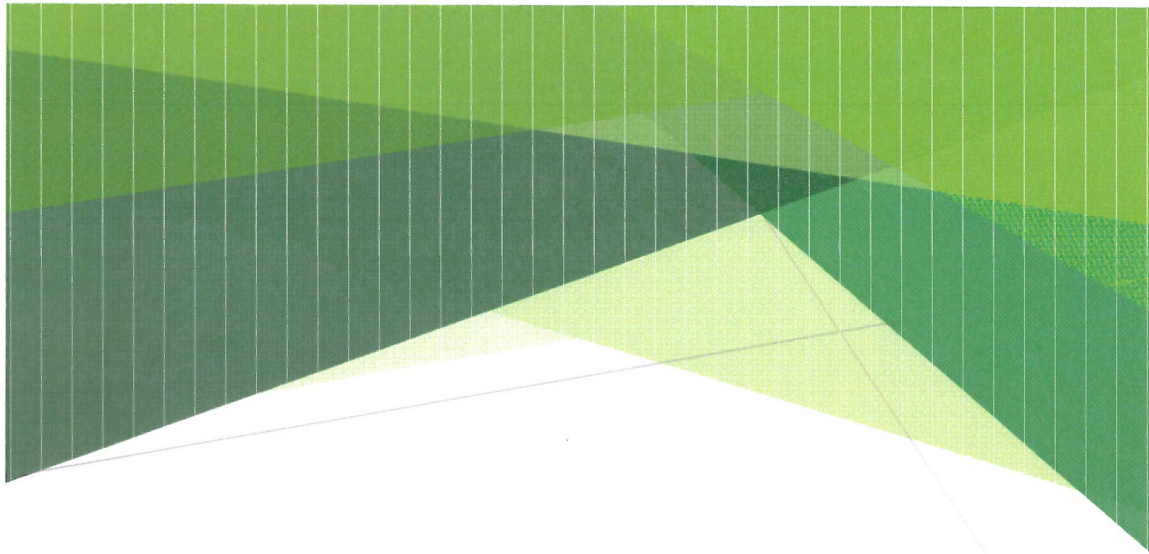
<b>TOTAL ORIGINAL CONTRACT</b>					\$199,125.00		\$69,370.00		\$130,420.00		\$199,790.00
--------------------------------	--	--	--	--	--------------	--	-------------	--	--------------	--	--------------

					\$0.00		\$0.00		\$0.00	0	\$0.00
					\$0.00		\$0.00		\$0.00	0	\$0.00
					\$0.00		\$0.00		\$0.00		\$0.00

**REVISED CONTRACT AMOUNT \$199,125.00**

<b>WORK COMPLETED</b>					\$69,370.00		\$130,420.00		\$199,790.00
<b>RETAINAGE 10% OF 50%</b>					(\$6,937.00)		(\$3,052.50)		(\$9,989.50)
<b>NET DUE THIS INVOICE</b>					\$62,433.00		\$127,367.50		\$189,800.50





# Bow Mar pay request grant and loan

Section 5





# Bow Mar



## Water and Sanitation District

8739 W. Coal Mine Ave. □ Littleton, CO 80123 □ (303) 979-2333 □ Fax (720) 726-5042

July 26, 2016

Derek Johnson, P.E.  
Colorado Water Conservation Board  
1313 Sherman, Room 721  
Denver, CO 80203  
derek.r.johson@state.co.us

Re: Bow Mar Rehabilitation and Replacement of Water Meters

Mr. Johnson:

This Pay Request is for costs associated through July 26, 2016. The following is a summary of all current Project charges:

Current Total Project Charges	\$4,183.71		
Previous Total Project Charges	\$1,600.00		
This Request	\$2,583.71		
		Loan CT2016-2516	Grant POGGI PDAA 20160000000000000753
CWCB Contracted Amount		\$329,500.00	\$36,601.84
Current Total		\$0	\$4,183.71
Previous Processed Amount		\$0	\$1,600.00
Amount of this Request		\$0	\$2,583.71

Included within are the invoices related to the requested payment amount identified above. If you have any questions, please feel free to call Alyssa at 303-979-2333.

Sincerely,



Alyssa Quinn



# Bow Mar



## Water and Sanitation District

8739 W. Coal Mine Ave. ☐ Littleton, CO 80123 ☐ (303) 979-2333 ☐ Fax (720) 726-5042

August 1, 2016

Derek Johnson, P.E.  
Colorado Water Conservation Board  
1313 Sherman, Room 721  
Denver, CO 80203  
derek.r.johson@state.co.us

Re: Pay Request No. 3 - Bow Mar Rehabilitation and Replacement of Water Meters

Mr. Johnson:

This Pay Request is for costs associated through July 29, 2016. The following is a summary of all current Project charges:

Current Total Project Charges	\$153,576.40		
Previous Total Project Charges	\$29,331.64		
This Request	\$124,244.76		
		Loan CT2016-2516	Grant POGGI PDAA 20160000000000000753
CWCB Contracted Amount		\$329,500.00	\$36,601.84
Current Total		\$116,974.56	\$36,601.84
Previous Processed Amount		\$0	\$29,331.64
Amount of this Request		\$116,974.56	\$7,270.20

Included within are the invoices related to the requested payment amount identified above. If you have any questions, please feel free to call Alyssa at 303-979-2333.

Sincerely,



Alyssa Quinn

Insurance Expiration Dates  
Levi Contractors - 7/1/2017

# Bow Mar



## Water and Sanitation District

8739 W. Coal Mine Ave. □ Littleton, CO 80123 □ (303) 979-2333 □ Fax (720) 726-5042

August 9, 2016

Derek Johnson, P.E.  
Colorado Water Conservation Board  
1313 Sherman, Room 721  
Denver, CO 80203  
derek.r.johnson@state.co.us

Re: Pay Request No. 4 - Bow Mar Rehabilitation and Replacement of Water Meters

Mr. Johnson:

This Pay Request is for costs associated through August 6, 2016. The following is a summary of all current Project charges:

Current Total Project Charges	\$171,544.39		
Previous Total Project Charges	\$153,576.40		
This Request	\$17,967.99		
		Loan CT2016-2516	Grant POGGI PDAA 20160000000000000753
CWCB Contracted Amount		\$329,500.00	\$36,601.84
Current Total		\$134,942.55	\$36,601.84
Previous Processed Amount		\$116,974.56	\$29,331.64
Amount of this Request		\$17,967.99	\$7,270.20

Included within are the invoices related to the requested payment amount identified above. If you have any questions, please feel free to call Alyssa at 303-979-2333.

Sincerely,



Alyssa Quinn

Insurance Expiration Dates  
Levi Contractors - 7/1/2017

Dana Kepner, 1429624-05, 8/02/2016, \$160.00  
Dana Kepner, 1431653-00, 8/03/2016, \$409.02  
Dana Kepner, 1429624-06, 8/03/2016, \$2,021.98  
Dana Kepner, 1431653-01, 8/04/2016, \$564.03  
Dana Kepner, 1432329-00, 8/04/2016, \$406.88  
Dana Kepner, 1432455-00, 8/05/2016, \$4,333.23  
Dana Kepner, 1432329-01, 8/05/2016, \$129.63  
Dana Kepner, 1429626-07, 8/05/2016, \$1,760.00  
Dana Kepner, 1432573-00, 8/08/2016, \$21.69  
Dana Kepner, 1429620-00, 8/09/2016, \$8,161.53

Total Current Pay Request Project Charges *(to be shown on previous cover page)*:  
\$17,967.99.

Project Status Report:

*Please see the attached project progress reports for detailed status regarding the current invoices.*

The project is 56% complete as of this Pay Request.



# Bow Mar Water and Sanitation District

---

August 26, 2016

Derek Johnson, P.E.  
Colorado Water Conservation Board  
1313 Sherman, Room 721  
Denver, CO 80203  
derek.r.johson@state.co.us

Re: Pay Request No. 5 - Bow Mar Rehabilitation and Replacement of Water Meters

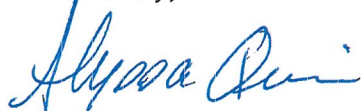
Mr. Johnson:

This Pay Request is for costs associated through August 25, 2016. The following is a summary of all current Project charges:

Current Total Project Charges	\$23,284.21	
Previous Total Project Charges	\$171,544.39	
TOTAL	\$194,828.60	
		Loan CT2016-2516
CWCB Contracted Amount		\$329,500.00
Current Total		\$158,226.76
Previous Processed Amount		\$134,942.55
Amount of this Request		\$23,284.21

Included within are the invoices related to the requested payment amount identified above. If you have any questions, please feel free to call Alyssa at 303-979-2333.

Sincerely,



Alyssa Quinn

Insurance Expiration Dates  
Levi Contractors - 7/1/2017

Dana Kepner, 1429624-08, 8/10/2016, \$880.00  
Dana Kepner, 1432851-00, 8/11/2016, \$2,393.40  
Dana Kepner, 1432960-00, 8/15/2016, \$506.52  
Dana Kepner, 1432188-00, 8/16/2016, \$4,358.29  
Dana Kepner, 1433247-00, 8/18/2016, \$83.28 (credit)  
Dana Kepner, 1432708-00, 8/18/2016, \$4,857.79  
Dana Kepner, 1432594-00, 8/18/2016, \$274.48  
HD Supply, F986511, 8/18/2016, \$4,848.00  
Dana Kepner, 1431452-01, 8/22/2016, \$148.47  
Dana Kepner, 1433731-00, 8/24/2016, \$71.34  
Dana Kepner, 6181146-00, 8/25/2016, \$5,029.20

Total Current Pay Request Project Charges (*to be shown on previous cover page*):  
\$23,284.21.

Project Status Report:

*Please see the attached project progress reports for detailed status regarding the current invoices.*

The project is 98% complete as of this Pay Request.

# Bow Mar



## Water and Sanitation District

8739 W. Coal Mine Ave. □ Littleton, CO 80123 □ (303) 979-2333 □ Fax (303) 933-1769

October 6, 2016

Derek Johnson, P.E.  
Colorado Water Conservation Board  
1313 Sherman, Room 721  
Denver, CO 80203  
derek.r.johson@state.co.us

Re: Pay Request No. 6 - Bow Mar Rehabilitation and Replacement of Water Meters

Mr. Johnson:

This Pay Request is for costs associated through August 25, 2016. The following is a summary of all current Project charges:

Current Total Project Charges	\$169,899.13	
Previous Total Project Charges	\$194,828.60	
TOTAL	\$364,727.73	
		Loan CT2016-2516
CWCB Contracted Amount		\$329,500.00
Current Total		\$328,125.89
Previous Processed Amount		\$158,226.76
Amount of this Request		\$169,899.13

Included within are the invoices related to the requested payment amount identified above. If you have any questions, please feel free to call Alyssa at 303-979-2333.

Sincerely,



Alyssa Quinn

Insurance Expiration Dates  
Levi Contractors - 7/1/2017



Dana Kepner, 1429624-09, 8/23/2016, \$1,355.29  
Dana Kepner, 1429624-10, 8/26/2016, \$914.79  
Dana Kepner, 1433972-00, 8/29/2016, \$184.49  
Dana Kepner, 1433951-00, 8/29/2016, \$78.80  
Dana Kepner, 1429624-11, 8/30/2016, \$320.00  
Dana Kepner, 1434090-00, 8/30/2016, \$71.61  
Dana Kepner, 1429620-02, 8/31/2016, \$33,431.40  
Dana Kepner, 1433661-00, 8/31/2016, \$233.94  
Dana Kepner, 1433908-00, 8/31/2016, \$476.31  
Dana Kepner, 1432116-00, 8/31/2016, \$116.18  
Dana Kepner, 1433621-00, 8/31/2016, \$59.42  
Dana Kepner, 1433620-00, 8/31/2016, \$398.86  
Dana Kepner, 1432708-01, 8/31/2016, \$171.20  
Dana Kepner, 1433498-00, 8/31/2016, \$13,209.48  
Dana Kepner, 1429620-01, 8/31/2016, \$32,480.25  
Dana Kepner, 1429620-03, 8/31/2016, \$26,000.00  
Dana Kepner, 1434451-00, 9/06/2016, \$456.84  
Levi Contractors, 7747, 9/13/2016, \$137,357.00  
Dana Kepner, 1436179-00, 9/30/2016, \$77,416.73 (credit)

Total Current Pay Request Project Charges *(to be shown on previous cover page)*:  
\$169,899.13.

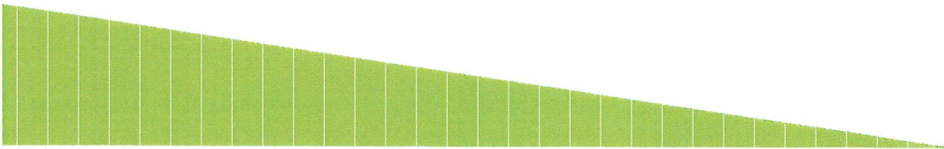
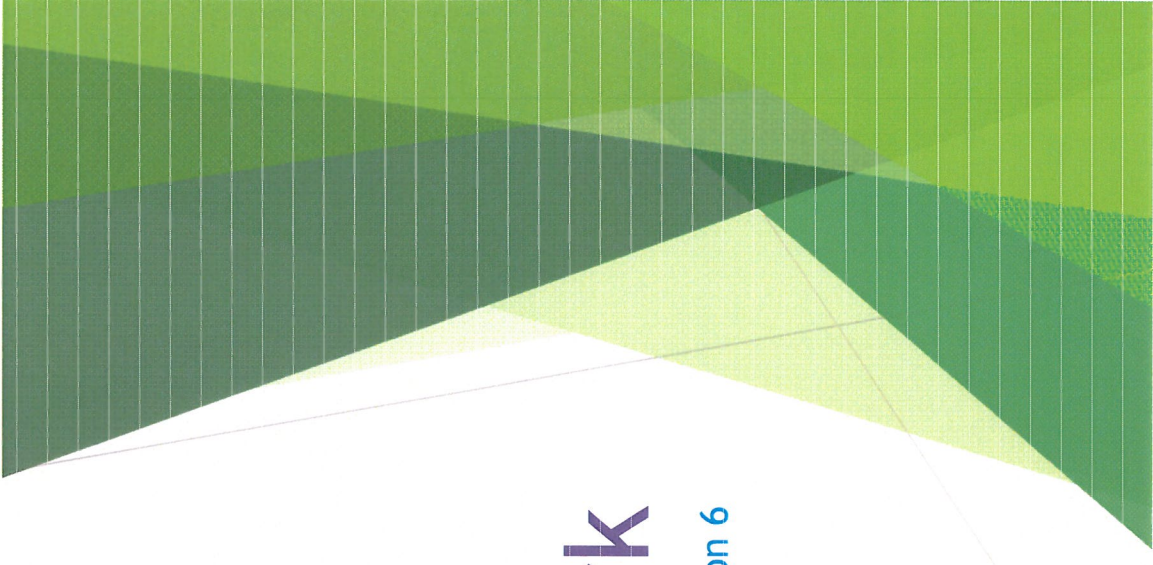
Project Status Report:

*Please see the attached project progress reports for detailed status regarding the current invoices.*

The project is 100% complete as of this Pay Request.

# Pictures of field work

## Section 6





# NEW METER INSTALLATION WITH NEW COPPER SETTER





**12" EXTENSION METER  
SETTER RAISING THE HEIGHT  
OF THE NEW METER FOR  
ACCESS**





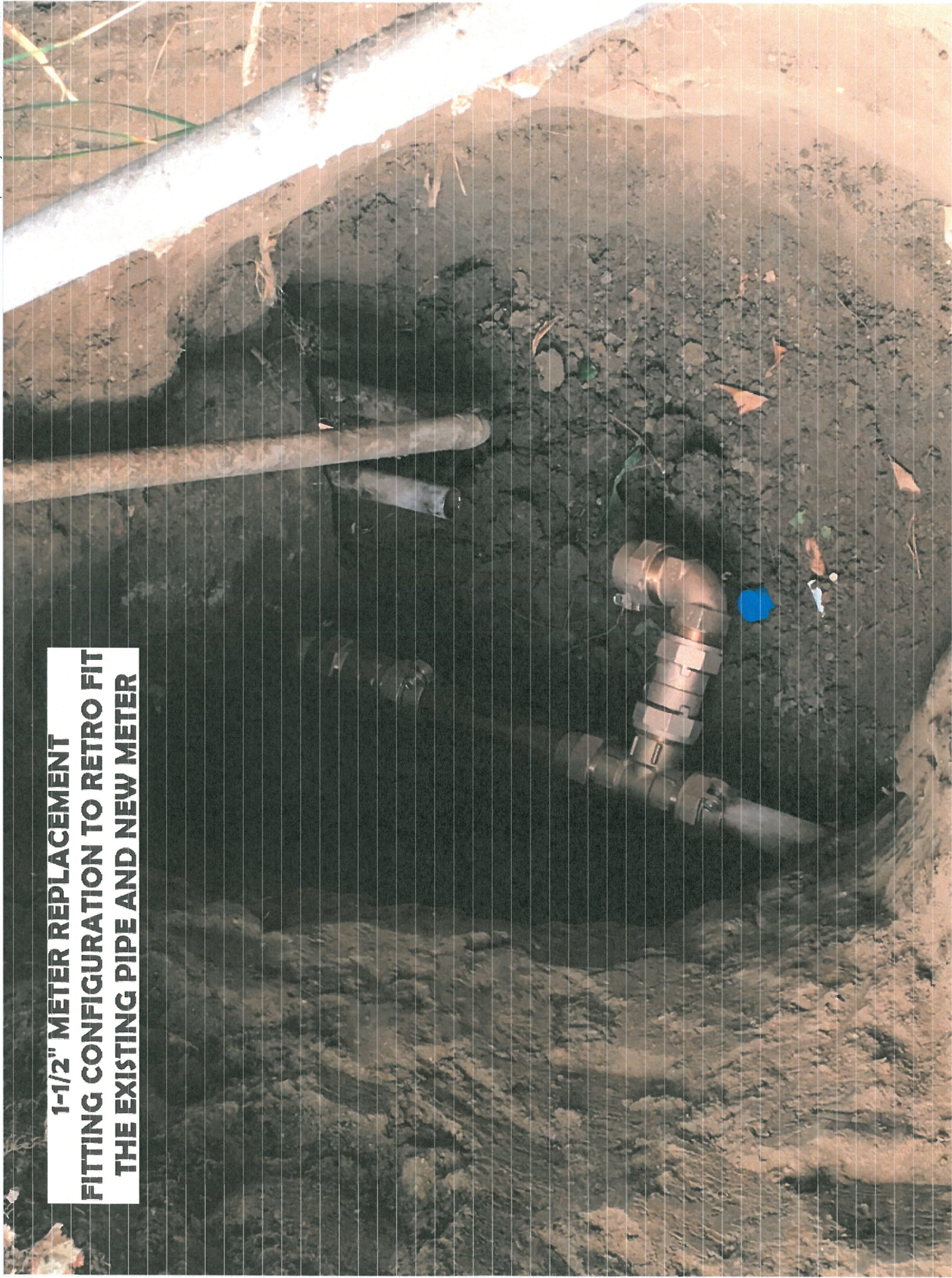
# **GALVANIZED SERVICE PIPE ENTERING AND EXITING METER PIT**

Galvanized service tranisition to  
copper





**1-1/2" METER REPLACEMENT  
FITTING CONFIGURATION TO RETRO FIT  
THE EXISTING PIPE AND NEW METER**





## NEW METER DOME AND FROST LID







# NEW INSTALLATION OF THE PEARL METER