#### **CITY OF VISALIA**

315 East Acequia Avenue Visalia, CA 93291

			010 Edot7	tooquia 7	Worldo Vio	ana, 6, 10020 .		
					E ORDER FO			
			Riggin Ave	nue Wide	ning & Improv	ements Project	1	
	Change C	order No.:	1			City Project No.:	3010-72000/CP0	398-999
	Subi	mitted by:	Diego Cor	vera		Federal No.:	N/A	
	Date S	ubmitted:	December 8	Puro	chase Order No.:	PO4217		
Co	mmittee Rev	iew Date:	December 10	), 2025	Packa	ige No. of Pages	5	
			Engineer Co	ontractor		Specifications	Plans	Exhibits
	Change Re	quested by:		Χ	Attachments:		Х	
To:	Agee Con	struction Co	rporation				Contractor	
You a	re directed to	make the follo	owing changes from	m the plans	and specification	ons or do the follow	wing described wo	rk not included in
			nis contract. NOT					
DESC	CRIPTION O	F WORK:						
			stimate of quantitie					
								quipment is actually
			ade for idle time. T	he last per	centage shown	is the net accumu	lated increase or o	decrease from the
origina		he Bid Item Li	nissions; UT=Utilities	· BO-Balan	co of Quantitios: LI	N=I Inforcecon: Cof	S-Owner Directed C	hange of Scope
Item	Categories.	XU-EIIOIS & OII	mssions, or-oundes	, DQ-Daiaii	ce of Quantities, o	N-Officieseeff, Con	5-Owner Directed C	nange of Scope
No.	Category		Description of C	hange Orc	der	Net increase	*Net decrease	Total Change
1		Water Syster				\$346,736.00	\$0.00	\$346,736.00
		-	Tota	I Cost of	Change Order:	\$346,736.00	\$0.00	\$346,736.00
		ase" as a neg	ative number (i.e.	-1000)				
_	Details:							
								ation Changes, Plan
	_		provide clear direct  : AGREED PRICE		all supporting a	ocuments for CO	Committee.	
I I CIVI	i. water Sys	sterri Criange	. AGNEED PRICE	<u> </u>				
Contra	actor to insta	II 2,583 LF of	12" ductile iron w	ater pipe,	3 EA fire hydrai	nts, 3 EA 12" gate	e valves, 1 EA irri	gation service, and
			n the revised plan				-	
			ans called for 2,5					
			• •			•	•	pages 3 through 5
			that specified the					
								and the additon of
ine ga	ite vaives, irr	igation servic	e, and CL&C offs	ets. All wo	rk snall be in ac	cordance with Co	ontract document	S.
		0	44. 04.	Φ0	000 004 00			
	NI-4	-	tract Amount:		098,281.00	4 200/	Increase / Dears	200
			Change Order: nange Orders:	<b>Þ</b>	346,736.00 \$0.00		Increase / Decre of Original Contr	
	rotal COSt C	•	ract Amount:	\$8.	\$0.00 <b>445,017.00</b>		Over Original Contr	
Note:	Change Orde		reater than \$100,0				. Trail Original Oc	dot / willouin
				•		Date of Complet	ion per Contract:	02/27/2026
			lditional days: dded this CO:	0	Original	•	e of Completion:	03/20/2026
I	Contrac	. work days a	uusu iilis CO.	<u> </u>		MEM Dar	c or completion.	03/20/2020

### **CITY OF VISALIA**

315 East Acequia Avenue Visalia, CA 93291

CHANGE ORDER FORM								
	Riggin Avenue Wid	lening Project Kelsey St to Shirk St						
Change Order No.:	1	City Project No.: 3010-72	000/CP0398-999					
Submitted by:	Diego Corvera	Federal No.: N/A						
Date Submitted:	December 8, 2025	Purchase Order No.: PO4217						
Committee Review Date:	December 10, 2025	Package No. of Pages	5					
materials, and perform the work sp	ecified, and will accept der, you are directed t ified.	eration to the change proposed and agree to pro as full payment the prices shown above. o proceed with the ordered work. You may f						
Signature	·	Print Name & Title	Date					
SUBMITTED BY CONSTRUCTION MANAGER								
Signature		Print Name & Title	Date					
APPROVAL RECOMMENDED E	BY PROJECT ENGINE	ER						
Signature		Print Name & Title	Date					
<b>ENGINEER APPROVAL BY SUI</b>	PERVISOR/DEPART.	HEAD						
Signature		opher Crawford, City Engineer, for Huckleberry Eng. & Bldg. Director	Date					
CHANGE ORDER COMMITTEE	ACTION:							
(note: Committee Chair to check								
Approved:		Resubmit w/changes:						
Approved w/revisions:		Denied:						
	<del>_</del>	,Committee Chair						
Signature	·	Print Name & Title	Date					



Phone 559/299-3290 Fax 559/299-3503 License # 631980

### PCO 04.1 - Water System Material Change

September 24, 2025

To: NV5 Agee Job #: **25-05** 

3330 W. Mineral King Ave. #B Job Name: Riggin Ave. Widening from Kelsey to Shirk

Visalia, CA 93291 Attn: Kolton Walker

Project No. 3010-72000 / CP0398-999

#### Cost proposal to complete the following work:

This cost proposal is to address the plan revision from California Water Service (CWS) received 7/31/25 changing the pipe material from PVC to Ductile Iron and adds (3) 12" gate valves, (1) irrigation service and (2) CL&C offsets.

		<u>Qty</u>	<u>UOM</u>	Unit Price	<u>Total</u>
<u>Labor</u>					
	Agee Traffic Control for (1) Irrigation Service Connected to (N) water main	1	LS	\$2,500.00	\$2,500.00
Subcontrac	<u>ctor</u>				
	99 Pipeline - Bid Proposal	-1	LS	\$285,786.00	-\$285,786.00
	Deduct Agee Bid markup	-1	LS	\$22,014.00	-\$22,014.00
	99 Pipeline - Revised Scope Bid Proposal	1	LS	\$592,760.00	\$592,760.00
	Add Agee 10% PCO markup	1	LS	\$59,276.00	\$59,276.00
	Subtotal				\$346,736.00
	Agee Markup 10%			(	(INCLUDED ABOVE)
	TOTAL			=	\$346,736.00

Note	<u>es</u>		
1	1" Irrigation service located west of Clancy Ave that ties into (E) others	Water Main to be installed by CWS. Tr	affic control by
2	(E) Water Valves to be lowered and raised by CWS. (N) Water	Values to be lowered and raised by 00 l	Pinalina Ina
2	(L) Water valves to be lowered and raised by CWS. (W) Water	City of Visalia - Submittal Review	тренне итс.
3		City of Visalia - Submittal Neview	
Sub	mitted By:	Accepted Revise & Resubmit  Accepted w/Comments Denied  Accepted w/Revisions	
Dav	vid Altstatt	This review is for general conformance with the City of Visalia Standard Plans, Standard Specifications, and Contract Documents	
	d Altstatt c Construction Corporation	only. The contractor is responsible for confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating its work with that of all other trades; and performing its work in a safe and satisfactory manner. The City neither accepts nor assumes any liability for errors or omissions. Revisions or comments made during this review, or lack thereof, do not relieve the submitter from compliance with applicable National, State, or Local Codes, general industry standards of design, or the Contract Documents.	
		Data 10/10/2025	





Date: 3/4/2025 **Bid No:** 

P.O. Box 71

Porterville, CA 93258

Ph: 559-781-0099 Fax: 559-781-5099

**BID FOR:** Agee Construction JOB: Riggin Ave Widening

			UNIT	
ITEM #	QUANTITY	DESCRIPTION	COST	TOTAL
		Miscellaneous		
1	1	Mobilization	4500.00	4500.00
			Mobilization Subtotal	4500.00
		Cal Water		
52	3	Fire Hydrants	14550.00	43650.00
53	2583	12" C900 DR18	92.00	237636.00
			Cal Water Subtotal	281286.00
Notes:			Total Bid Proposal	\$285,786.00

PRICES DO NOT INCLUDE:

Inspection Fees and Engineering

Compaction and Bacteria tests

Extra work and materials due to sandy soil

Heater remix

Camara Testing

Traffic Control

Slurry or concrete encasements unless specified included

No tree removal or trimming including root removal

No fencing of project or trenches. To be done by owner

No permanent fence removal or replacement

No removal or replacement of existing landscape

Holding of Power, telephone, streetlight, or any other poles

No concrete removal or replacement

- A) This proposal is good for (30) Days.
- B) Dewatering of site is specifically excluded.
- C) Owner to provide and maintain restroom facilities.
- D) Permits, Testing, Survey and Staking not included.
- E) This proposal excludes all work not specifically included.
- F) This proposal will become a controlling part of any contract.
- G) No Import/Export of Native Material unless specifically included.
- H) All work will be performed as weather and local regulations allow.
- I) All wages and based on non prevailing rates unless specifically noted.
- J) Pricing based on completion in one move in/out unless otherwise stated.
- K) Water and Water Source in close proximity to Job Site to be provided by owner.
- L) Any unsuitable sub grade or unforeseen objects will be handled on a time and material base.
- M) Proposal excludes any topical sealant, or striping of asphalt and concrete unless specifically included.
- N) Final billing amount based on quantities stated on this proposal or field measurements, whichever is greater.

Items within this proposal cannot be separated or removed unless agreed to in advance by 99 Pipeline. Work contained herein is all inclusive.

- O) All project schedules must be mutally agreed upon. 99 Pipeline, Inc. requires 15 days advance notice for scheduling of our work.
- P) 99 Pipeline, Inc. will not be held responsible for any pooling of water on asphalt or concrete pavement if design slop is less than 1.5%.
- Q) All invoices are due and payable 30 within days from invoice date. Interest will be applied to all invoices at the rate of 18% for any invoices paid after the 30 day expiration date.
- R) Due to volatile oil prices, any asphalt placed 30 days after the date on this proposal will be subject to the Caltrans oil index. Payment Adjustments for Price Index Fluctuations.
- S) (1) Mobilization for each phase of construction listed above. Additional mobilizations will be billed at the rate of cost plus 15% per hour for all lowbed hours to mobilize/demobilze.
- T) Any additional work not covered in this bid will be handled on a time and material, or change order basis. All costs will be agreed to in writing prior to any additional work being performed.
- U) Prior to any work being scheduled, 99 Pipeline must have a signed copy of this proposal, or a fully executed contract with this proposal attached, and all necessary preliminary information on file in our office.
- V) 99 Pipeline, Inc. will not be responsible for damage to any buried, or unmarked underground structures or man made improvements of any kind. Repairs to any such item will be at the owners expense.
- W) 99 Pipeline, Inc. shall not be held liable for any impacts, delays, labor overruns, material overruns and/or cost overruns related to its work stemming from the current or any further flu epidemics, and/or COVID-19 as defined by the United States Centers for Diease Control and Prevention. 99 Pipeline, Inc. shall further be entitled to a change order for any and all time and costs associated with said epidemic(s).
- X) Any contract or agreement resulting from this proposal will contain the following clause: Claims in dispute arising between the contractor

and subcontractor shall be resolved in the following manner. In the event an agreement cannot be reached within 45 days calendar days, either party has the right to have the issue submitted for arbitration/meditation. Any arbitration/meditation shall be conducted by any agree-upon provider of arbitration/meditation service who is on the list of alternate dispute providers for the County of Tulare.

#### **Payment Terms:**

A finance charge of 18% per month will be added to all past due accounts. The debtor agrees to pay all legal fees, court costs for collection or delinquent accounts and legal rate of interest for past due accounts.

Preliminary information below must be filled out prior to the start of work.

Job Number:	
Job Name:	
Job Address:	
City, State, Zip:	

**Prevailing Wage: Federal or State (Circle)** 

Project Lender:	
Original Contractor:	
Bond Company:	
Bond Number:	
Owner:	



SCOPE CHANGE **PROPOSAL** 

Date: 9/17/2025 **Bid No:** 

P.O. Box 71

Porterville, CA 93258

Ph: 559-781-0099 Fax: 559-781-5099

**BID FOR:** Agee Construction JOB: Riggin Ave Widening

			UNIT	
ITEM #	QUANTITY	DESCRIPTION	COST	TOTAL
		Miscellaneous		
1	1	Mobilization	4500.00	4500.00
			Mobilization Subtotal	4500.00
		Cal Water		
52	3	Fire Hydrants	14550.00	43650.00
53	2583	12" Ductile Iron	184.00	475272.00
CO	3	12" Gate Valves	6925.00	20775.00
CO	3	Raise valves to grade	768.00	2304.00
CO	1	1" Irrigation water service with box no meter	5465.00	5465.00
CO	2	CL&C Offsets	20397.00	40794.00
			_	
			Cal Water Subtotal	588260.00

\$592,760.00 **Total Bid Proposal** Notes:

PRICES DO NOT INCLUDE:

Inspection Fees and Engineering

Compaction and Bacteria tests

Extra work and materials due to sandy soil

Heater remix

Camara Testing

Traffic Control

Slurry or concrete encasements unless specified included

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No permanent fence removal or replacement

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Job Number:	
Job Name:	
Job Address:	
City, State, Zip:	

**Prevailing Wage: Federal or State (Circle)** 

Project Lender:	
Original Contractor:	
Bond Company:	
Bond Number:	
Owner:	

#### **GENERAL NOTES:**

Inspection of all materials and installation for pipeline, hydrants and services must be made by California Water Service. Telephone: (559) 624-1650 at

IMPORT BACKFILL REQUIRED WHEN

GOVERNING AGENCY'S COMPACTION

"WATER" LINEGUARD TAPE

REQUIREMENTS CANNOT BE MET

(FOR ALL PIPE)

TRACER WIRE

(FOR ALL PIPE)

POLYETHYLENE

1. ALL EXCESS SPOIL IN TRACT IS TO REMAIN TRENCHSIDE AND

2. ALL VALVE CASINGS AND COVERS SHALL BE RAISED TO FINISHED

TRENCH CROSS SECTION

N.T.S.

→ 12" BOTH SIDES

TRENCH NOTES FOR TIE-IN

(FOR STRAIGHT TIE-IN ONLY)

TRENCH WIDTH (W) SHALL BE ONE PIPE DIAMETER PLUS

12" ON EACH SIDE OF THE PIPE. (E.G. A 6" OR 8"

TRENCH LENGTH (L) SHALL BE 14' (MIN). (10' FOR

TIE-IN PLUS 2' EXPOSURE OF EXISTING AND NEW

TRENCH DEPTH (D) SHALL BE 12" (MIN) BELOW

DEVELOPER'S CONTRACTOR SHALL PROVIDE TRENCH

DEVELOPER'S CONTRACTOR SHALL BE RESPONSIBLE FOR

EMBEDMENT BACKFILL, TRENCH BACKFILL, COMPACTION

TO REQUIREMENTS, AND FINAL PAVEMENT RESTORATION.

TYP. SEWER & STORM DRAIN CROSSINGS

SCALE: N.T.S.

CL&C PIPE\_ DOUBLE OFFSET

TYP. SEWER & STORM DRAIN CROSSINGS

CROSSING WITH CL&C DOUBLE OFFSET (TYPICAL)

PROPOSED WATER MAIN

⊥ Ss/sD

MAIN REQUIRES A 30" TRENCH).

SHORING PER OSHA STANDARDS.

CROSSING (TYPICAL)

CROSSING ABOVE UTILITY.

- USE SOLID STICK OF PIPE CENTERED.

- CL&C DOUBLE OFFSETS LENGTH VARIES.

(8') HORIZONTAL FEET FROM CROSSING.

SEE DWG. CWT-693 FOR DIMENSIONS.

- ALL OFFSETS ARE DESIGN TO MEET EIGHT FOOT

MINIMUM ONE FOOT (1') VERTICAL SEPARATION

BETWEEN TOP OF MAIN AND BOTTOM OF SS/SD.

NO CONNECTION JOINTS SHALL BE MADE IN THI

MINIMUM ONE FOOT (1') VERTICAL SEPARATION

BETWEEN TOP/BOTTOM OF MAIN AND TOP/BOTTOM

MINIMUM 2.5' OF COVER TO ALSO BE MAINTAINED IF

WATER MAIN WITHIN EIGHT (8) HORIZONTAL FEET OF

GRADE AFTER PERMANENT PAVEMENT HAS BEEN PLACED.

ALL EXCESS SPOIL OFF TRACT IS TO BE REMOVE.

ENCASEMENT, 8MIL

PVC C-900 PIPE OR

DUCTILE IRON PIPE

(FOR DUCTILE IRON PIPE)

WITH NATIVE BACKFILL

PAVEMENT & BASEROCK

UNLESS

**OTHERWISE** 

NOTED

(WHERE REQUIRED)

MAX.

- least 48 hours before starting work on water facilities. . Contact Underground Service Alert at (800) 642—2444 at least 48 hours
- prior to the commencement of this project . Place a continuous wire and strip of detector tape over all pipe and extend up into all valve boxes. Tracer wire is required on all pipe. . For details of typical thrust block installation, see latest revision of drawing
- Protect underground flexible couplings, bare steel, MJxMJ sleeves, and all bolts (including stainless steel) as follows:
- a. The entire area of the fitting must be dry and free of dust, dirt, and other foreign matter. Rust or other foreign matter must be removed by scraping or wire brushing. Wiping with a dry clean cloth may be necessary to remove the particles from brush cleaning. Any oil or grease must be removed by using a low residue, volatile petroleum solvent before application of grease and wrapping.
- b. The exposed area should be coated with a heavy coating of Metalguard 301 grease by the glove method to a thickness of at least 1/4".
- c. Firmly wrap the entire grease area with one layer, half lapped of a woven glass filament mesh (Res or Bit Wrap, 4" wide).
- d. Apply a second layer of Metalguard 301 grease on top of the glass filament by the glove method to a thickness of at least 1/4".
- e. Firmly wrap the entire grease area with a second layer, half lapped of the woven glass filament mesh. f. Cover the entire mesh wrapped area of the fitting with a third and final coating at least 1/4" thick of Metalguard 301 grease by the glove
- g.Firmly apply 2 layers of polywrap, half lapped over all areas of the coated and wrapped fitting. Backfilling may follow immediately after this
- wrapping. No valve covers or meter boxes are to lie in sidewalks, cross gutter, curb or
- driveways. Each service should also be located to provide protection to the meter box from auto traffic and parking. The exact location of each service to be determined at the time of installation to avoid conflicts with other utilities. Therefore, the number of long, short and split services may vary. Preferred CWS location to be staked and installed by developer's engineer. Any relocations after installation will be
- at developer's expense. Services shall be installed at least 10 feet horizontally from sewer laterals and at least 4 feet horizontally from any storm drain structure.
- D. Location of blow-off in new street area will terminate where street improvement ends. O. Services installed across street area will need import backfill when
- government agency's compaction requirements cannot be met with native 11. It is the responsibility of the contractor to verify the exact location and depth of all existing and proposed facilities prior to water main installation. 12. The list of materials for this project is for CWS estimating and reference
- purposes only and is not intended as a full take-off of material required. 13. This water plan design is based on incomplete and unapproved improvement plans. Therefore, sewers, storm drains and street grading conflicts may occur.
- 14. Contractor to ensure air in the pipeline is removed using existing outlets, such as fire hydrants and blowoffs. Contractor is responsible for installing air releases if existing outlets are insufficient. 15. Facilities separation:
- A. Water main shall be installed at least 10 feet horizontally from and one foot vertically above any parallel pipeline conveying sewage (untreated, primary, or secondary), disinfected secondary recycled water, or hazardous fluids. Center a full nominal laying length of pipe at crossings.
- foot vertically above any pipeline conveying tertiary recycled water or storm drainaae.

B.Water main shall be installed at least 4 feet horizontally from and one

- C.At crossings, water main shall be constructed no less than 45-degrees to and at least one foot vertically above any pipelines indicated in A and B
- D.No connection joints shall be made in the water main within eight (8) horizontal feet of crossing any pipelines indicated in A and B above.
- E. Water main shall not be installed within 100 horizontal feet of any sanitary landfill, wastewater disposal pond, or hazardous waste disposal site.
- F. Water main shall not be installed within 25 horizontal feet of any cesspool, septic tank, sewage leach field, seepage pit, underground hazardous material storage tank, or groundwater recharge project site.
- G.Water main, fire hydrants, fire services and meter boxes shall be installed at least 5 feet horizontally from any dry utilities and structures.
- The minimum separation distances set forth in this section shall be measured from the nearest outside edge of each pipe barrel.
- 16. All work shall comply with Cal Water specifications for materials, installation, disinfection and dechlorination per latest revision drawing CW-832. 17. Trench backfill and paving shall conform to trench section details and all
- governing agency requirements. 18. Any easements and rights-of-way which may be necessary or reasonably appropriate for the extension will be conveyed or caused to be conveyed by
- 19.  $\bigcirc$  = Indicates fire hydrant (Visalia)
- Limits of CWS ownership for each hydrant: 1 - 6 Inch Fire Hydrant (See Below)
- 1 6 Inch Outlet Tee PO. DI
- 1 6 Inch Gate Valve PO 3 - 6 Inch Restraint PO Gaskets 1 — Valve Casing & Cover Assembly
- +/- 10 Feet of 6 Inch Ductile Iron Pipe 1 — 6x42 Inch Fire Hydrant Bury FLGxMJ 1 - 6x12 Inch Fire Hydrant Extension
- $1 \text{Set } 3/4" \times 3-1/2" \#304 \text{ SS Bolts & Nuts,}$

and Gaskets for Hydrant Break-off

- and Gaskets for Hydrant 1 - Set 3/4" x 3-1/2" SS Bolts & Nuts,
- Polywrap Tubing, PVC Tape, Line Guard and Misc. Coating
- IF FIELD CONDITIONS OR FIRE PROTECTION AGENCY REQUIRE AN ALTERNATIVE INSTALLATION, THE OUTLET TEE AND GATE
- VALVE MAY BE REPLACED WITH: 1 - 6 Inch Outlet Tee POxFLG, DI
- 1 6 Inch Gate Valve FLGxPO 1 - 6 Inch Gasket for Flanged Joint
- $1 \text{Set } 3/4\text{"} \times 3-1/2\text{"} \#304 \text{ SS Bolts & Nuts,}$ and Gaskets

### FIRE HYDRANT:

Residential: CLOW 950 2-1/2 & 4-1/2 Commercial: CLOW 960 (2) 2-1/2 & 4-1/2

(The fire chief will make the final choice of fire hydrant head

with Cal Water approval.)

A break-off check valve may be required if specified by district personnel. Use Clow Model LB400 or approved equal.

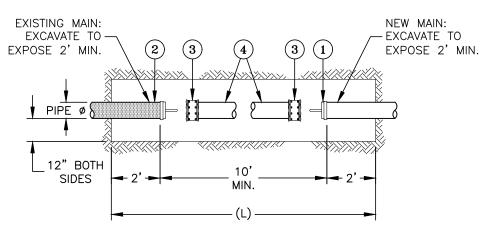
### PROJECT SPECIFIC NOTES

20. This extension is contingent upon an utility encroachment permit from the City of Visalia 1. Use PVC 1°± deflection and 5°± deflection with high deflection couplings to achieve proper radius for curves and proper angles for ells. Do not deflect pipe at fittings.

# CALIFORNIA WATER SERVICE

### NEW BUSINESS PROJECT RIGGIN WIDENING FROM KELSEY ST TO SHIRK ST

NOTE: IF UNFORESEEN CIRCUMSTANCES OR FIELD CONDITIONS ARISE THAT REQUIRE ALTERNATE OR ADDITIONAL MATERIALS FOR THE TIE-IN TO THE EXISTING SYSTEM, THE DEVELOPER'S CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE THIS MATERIAL TO THE COMPANY TO COMPLETE THE TIE-IN.



### TIE-IN DETAIL "A" (FOR 2 LOCATIONS)

1. DEVELOPER'S CONTRACTOR SHALL INSTALL NEW MAIN AND ADJUST FROM NOMINAL LINE AND GRADE TO MATCH EXISTING FACILITIES AT THIS LOCATION. THE DEVELOPER'S CONTRACTOR SHALL INSTALL A TEMPORARY CAP AND BLOWOFF AT THIS LOCATION.

CALIFORNIA WATER SERVICE WILL TIE THE NEW MAIN FROM THIS

2. EXISTING MAIN, 12" DUCTILE IRON PIPE

THE DEVELOPER'S CONTRACTOR SHALL PROVIDE CALIFORNIA WATER SERVICE WITH THE FOLLOWING MATERIALS FOR THE TIE-IN IT WILL MAKE AT NORTH SHIRK STREET.

3. 1 - 12" SOLID SLEEVE MJ, 10" SLEEVE (2 TOTAL) 4. 10' - 12" DUCTILE IRON PIPE

NOTE: IN ADDITION, THE DEVELOPER'S CONTRACTOR SHALL PROVIDE: MISC. MATERIAL AND EXCAVATION EQUIPMENT (I.E. EXCAVATOR/BACKHOE) REQUIRED TO COMPLETE THE TIE—IN SUCH AS. BUT NOT LIMITED TO: PROTECTION COATING MATERIAL FOR PIPE & FITTINGS, LINEGUARD TAPE, CONCRETE FOR THRUST BLOCKS, EMBEDMENT BACKFILL AROUND AND OVER THE PIPE, FINAL BACKFILL TO MEET COMPACTION REQUIREMENT, PAVEMENT REPLACEMENT AND EQUIPMENT NECESSARY TO FACILITATE THE TIE-IN INCLUDING BUT NOT LIMITED TO EXCAVATION & DE-WATERING.

### PIPELINE CROSSING

INFORMATION AT WATER MAIN CROSSINGS IN CONFLICT WITH OTHER FACILITIES: When the water main is in conflict with existing facilities or proposed facilities that require more than a 2 foot adjustment from the nominal 4 feet of cover, a fabricated steel cement mortar lined and cement mortar coated offset will be installed at the crossing per CWS standards.

### \* DENOTES CL&C OFFSET & PIPE REQUIRED

- FINISHED GRADE ELEV. = 302.1 2 - 12" STORM DRAIN INVERT ELEV. = 295.4 INSTALL 12" DI OVER 12" SD w/ 3.4' COVER.
- FINISHED GRADE ELEV. = 302.3 8" SANITARY SEWER INVERT ELEV. = 289.5 INSTALL 12" DI OVER 8" SS w/ 4' COVER.
- FINISHED GRADE ELEV. = 303.8 18" STORM DRAIN INVERT ELEV. = 300.1 INSTALL 14" CL&C DOUBLE OFFSET UNDER 18" SD w/ 5.2' COVER. PC. MK. "X" PER DWG. CWT-579.
- FINISHED GRADE ELEV. = 304.2 2 - 15" STORM DRAIN INVERT ELEV. = 297.7 PROTECT EX. 12" DI MAIN IN PLACE w/ 0.5' OF SEPARATION
- FINISHED GRADE ELEV. = 302.2 10" SANITARY SEWER INVERT ELEV. = 290.7 PROTECT EX. 12" DI MAIN IN PLACE
- FINISHED GRADE ELEV. = 301.9 2 - 12" STORM DRAIN INVERT ELEV. = 296.5 INSTALL 14" CL&C PIPE UNDER 12" SD W/ 6.6' OF COVER PC. MK. "X2"
- FINISHED GRADE ELEV. = FIELD VERIFY INVERT ELEV. = FIELD VERIFY ELECTRIC LINE INSTALL 12" DI/PVC OVER w/ 2.5' MIN. COVER & 1' MIN. SEPARATION OR UNDER w/ 4' COVER & 1' MIN. SEPARATION.

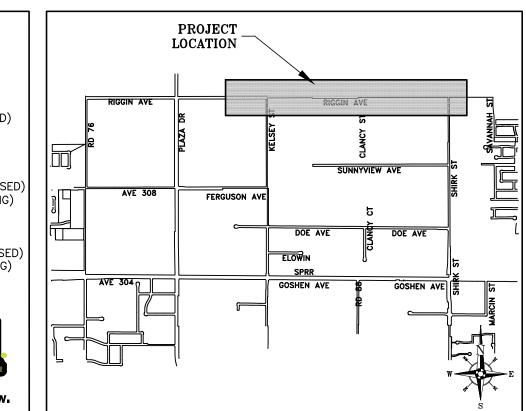
#### LEGEND: -/-/-/- TO BE ABANDONED 🛨 = TEE → = ELBOW, 45° —— GAS LINE **≒**1 = ELBOW, 90° TELECOMMUNICATIONS LINE $\infty$ = BLOWOFF (PROPOSED) ——FO—— FIBER OPTIC ➤ = BLOWOFF (EXISTING) OVERHEAD ELEC. LINES O = GATE VALVE (PROPOSED) ELECTRIC LINE = GATE VALVE (EXISTING) → = REDUCER (PROPOSED) —— comm—— COMMUNICATION LINE ► = REDUCER (EXISTING) STORM DRAIN LINE I = SOLID PLUG -----ss----- SANITARY SEWER LINE WATER LINE FIRE HYDRANT (EXISTING) -€-- CENTER LINE —R— - - — PROPERTY LINE/ ROW $\varnothing$ = CHECK VALVE ## = FLEX CPLG. — — — EASEMENT (PROPOSED) (WM) = WATER METER (PROPOSED) — — — EASEMENT (EXISTING) WM = WATER METER (EXISTING) RETAINING WALL

APN = ASSESSORS PARCEL NUMBER 

FL = FLOW LINEEOP = EDGE OF PAVEMENT © = ELECTRICAL MANHOLE ⑤ □ = STORM DRAIN MANHOLE SSS = SEWER MANHOLE

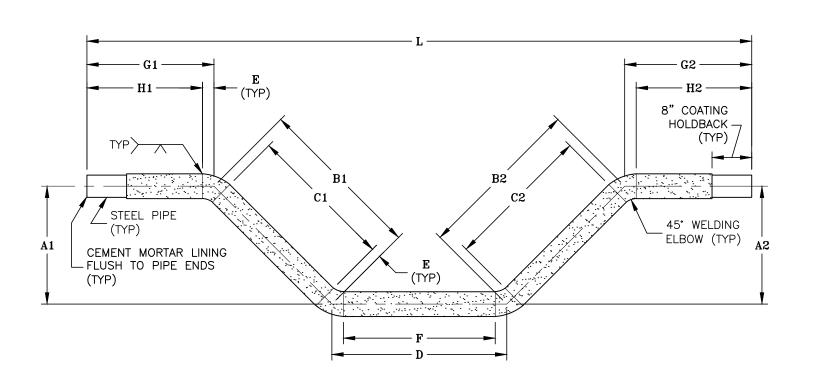
① = TELECOM MANHOLE





VICINITY MAP

## PIECE MARKED QTY A1 B1 C1 D F G1 H1 G2 H2 G2 A2 B2 | C2 | L 1 | 1.2 | 1.7 | 0.2 | 3.9 | 2.5 | 5.8 | 5.1 | 5.8 | 5.1 | 1.2 | 1.7 | 0.2 | 2.6 | 3.7 | 2.2 | 5.2 | 3.7 | 4.4 | 3.7 | 4.4 | 3.7 | 2.6 | 3.7 | 2.2 |



## **NOTES:**

- 1. STEEL CYLINDER PER A.S.A. WITH ASTM A53 TEST PRESSURE AND ASTM A36 PHYSICAL PROPERTIES.
- 2. COATING SHALL BE REINFORCED WITH 14 GAUGE WIRE MESH OR 14 GAUGE WIRE SPIRALLY WOUND IN CENTER OF COATING PER LATEST REVISION OF AWWA STANDARD C205
- 3. WELDING FITTINGS SHALL BE ASTM A234 GRADE B.
- 4. STEEL PIPE WITH 25.75" OD SHALL BE MANUFACTURED & TESTED PER LATEST REVISION OF AWWA STANDARD C200.

	PIPE	C			E	LBOW
PIECE MARKED	STEEL CYL. (OD)	SCHED.	CML	СМС	SCHED.	E
	6.63"	40	3/8"	3/4"	40	3.75"
	8.63"	20	3/8"	3/4"	40	5.00"
	10.75"	20	1/2"	3/4"	40	6.25"
	12.75"	20	1/2"	3/4"	.375"	7.50"
X & X2	14.0"	10	1/2"	3/4"	30	8.75"
	16.0"	10	1/2"	3/4"	30	10.00"
	18.0"	10	1/2"	3/4"	.375"	11.25"
	20.0"	10	1/2"	3/4"	20	12.50"
	25.75"	.25"	1/2"	3/4"	.375"	**

CML = CEMENT MORTAR LINING CMC = CEMENT MORTAR COATING

CEMENT MORTAR LINED & COATED STEEL DOUBLE OFFSET WITH 45° ELBOWS 693R7

### BILL OF MATERIALS

### <u>12" MAIN</u>

2600'-12" DUCTILE IRON PIPE 2880'-LINEGUARD TAPE 2880'-TRACER WIRE #12AWG SOLID COPPER W/45 MILS HMWPE INSULATION 3930'-POLYWRAP TUBING F/12" PIPE 35'-POLYWRAP TUBING F/DI FITTINGS 33- RLS PVC TAPE (100' ROLL) 3-12" GATE VALVE PO 3-VALVE CASING & COVER ASSY 4-12" ELL 45° PO 14-12" RINGS F/PO FITTINGS

(2) TIE-IN MATERIALS PER DETAIL "A"

### **SERVICES**

1-1" IRRIGATION SERVICE W/ 1" METER 1-1" IRRIGATION SERVICE W/ 1" METER OFF EX. MAIN TYPICAL MATERIALS PER DWG. CW-555 & 1029 (1") PLEASE CONTACT CAL WATER DISTRICT REPRESENTATIVE AND LOCAL CROSS-CONNECTION SPECIALIST TO ENSUR THAT ALL SERVICES ARE IN COMPLIANCE WITH CROSS-CONNECTION CONTROL REGULATIONS SET FORTH IN CPUC RULE 16 AND SWRCB CROSS-CONNECTION CONTROL POLICY HANDBOOK.

### FIRE HYDRANTS

3-6" FIRE HYDRANT 3-12"x6" TEE PO w/ (1) 6" RESTRAINT GASKETS & (2)-12" RINGS 3-6" ELL 90° PO w/ RESTRAINT GASKETS SEE NOTE #19 F/TYPICAL MATERIALS

### CL&C OFFSETS & PIPES

2-14" OD CL&C DOUBLE OFFSET, PC. MK. "X & X2" 4-14" OD STLx13.2"DI FLEX COUPLINGS, 10" SLEEVE

WHEN ASSEMBLING A PVC C-900 PIPE TO AN IRON FITTING (PUSH-ON OR MECHANICAL JOINT). REMOVE ALL BUT 1/4 INCH OF THE FACTORY MADE BEVEL FROM THE SPIGOT END OF THE PIPE PRIOR TO INSTALLATION.

## SUMMARY WORK BY CWS

2600' - 12" DUCTILE IRON PIPE(PAID BY CWS) 1 - 1" IRRIGATION SERVICE 3 - 6" FIRE HYDRANT(PAID BY CWS) 2 - 14" CL&C DOUBLE OFFSET, PC. MK. "X & X2"(PAID BY CWS) 2 - TIE-IN TO EX. 12" MAIN PER DETAIL "A"(PAID 1 - 1" IRRIGATION SERVICE OFF EX. MAIN

**ENGINEERING** , IFORA



DEPARTMENT

PLAT SHEET

VIS 24-26 & 24-27

NONE

PLAT SHEET NO.:

H. CONTRERAS

F. CEJA TECH REVIEW:

APPROVED BY: 6/6/2025

CHECKED BY:

No. 88210

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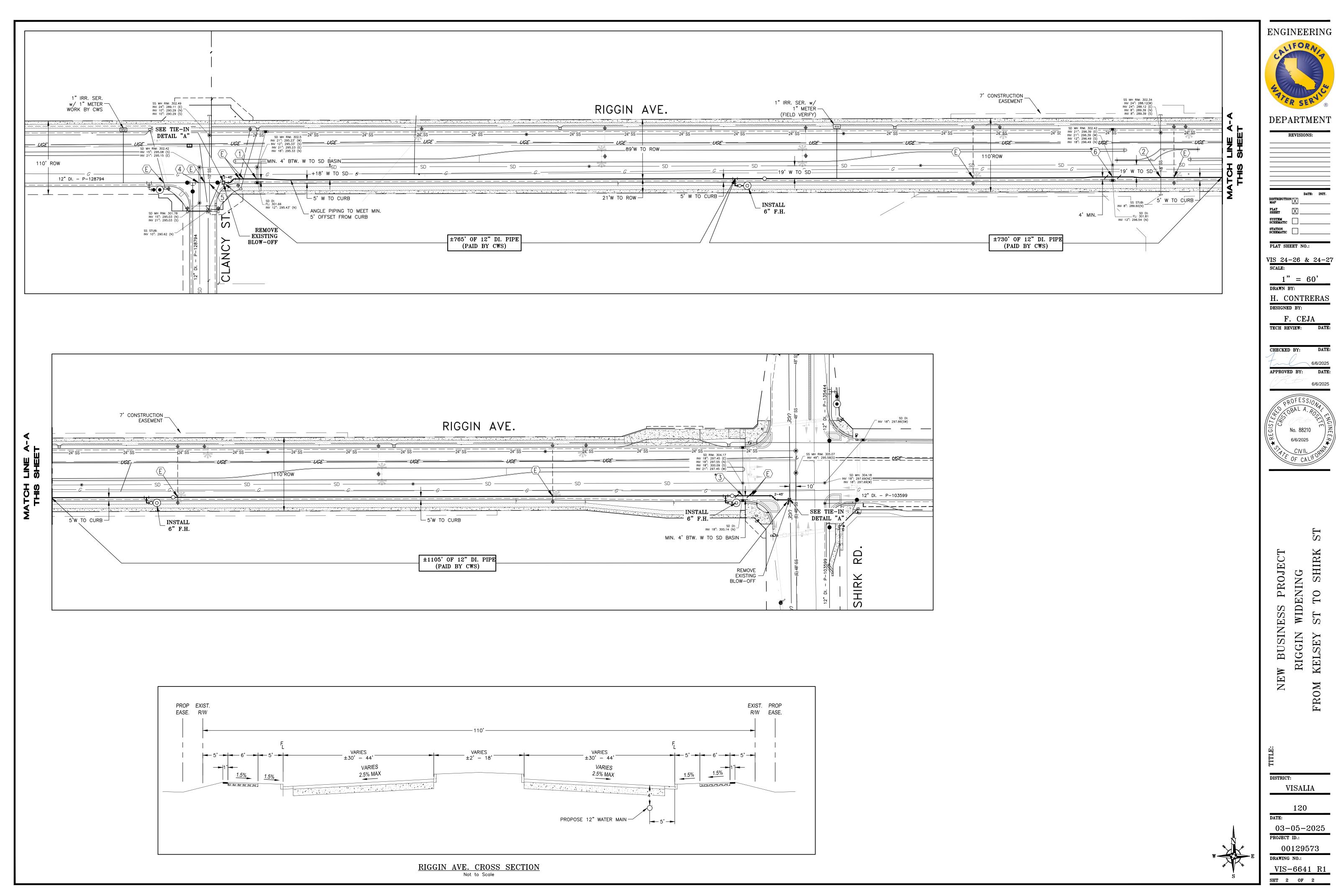
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PROJECT ID.: 00129573

VIS-6641 R1 SHT 1 OF 2

DRAWING NO.:



**ENGINEERING** 

DEPARTMENT

H. CONTRERAS

F. CEJA
TECH REVIEW: DATE:

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03-05-2025

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SHT 2 OF 2

American Ductile Iron Pipe (American).

Ductile Iron (DI) Pipe: All DI pipe shall comply with the latest revision of AWWA Standard C151 and shall be cement mortar lined in conformance with the latest revision of AWWA Standard C104. All DI Pipe shall be Pressure Class 350 for all sizes from 6" to 12" unless specified otherwise and shall be furnished with polyethylene encasement complying with the latest revision of AWWA Standard C105. All DI pipe shall be manufactured by McWane Ductile (McWane). U.S. Pipe, or

DI Pipe with Push-on Joints: All DI pipe shall have Push-on Joint ends complete with gasket unless specified otherwise on the drawings.

DI Pine with Restrained Push-on Joints: If specified on the drawings; for pipe sizes 6" to 12", Tyton Joint ® DI pipe manufactured by McWane or U.S. Pipe shall be restrained with Field Lok 350 ® or Sure Stop 350 ® gaskets. All DÍ pipe greater than 12" shall be TR Flex ® DI pipe by U.S. Pipe or McWane or Flex—Ring by American unless specified otherwise on the drawings.

DI Pipe with Flanged Joints: All DI Flanged pipe shall have Class 125 Flanges unless specified otherwise on the drawings. Gaskets for Flanged Joints shall be Flange-Tyte® Gaskets by U.S. Pipe,

Polyvinyl Chloride (PVC) Pipe: All PVC pipe shall be Class 235, DR 18, unless otherwise specified and shall comply with the latest revision of AWWA Standard C-900 for all sizes from 4" to 12". PVC pipe shall have ductile-iron pipe equivalent outside diameter dimensions. All PVC pipe shall be manufactured by J M Eagle. Diamond Plastic Corp., Vinyl Tech, CertainTeed (by Westlake Piping & Fittings), & North American Pipe Co. (by Westlake Pipe & Fittings).

PVC Pipe with Push-on Joints: All PVC pipe shall have Push-on Joint ends complete with gasket

PVC Certa-Lok® Restrained Joint Pipe: All PVC Certa-Lok® Restrained Joint pipe shall be manufactured by CertainTeed (by Westlake Pipina & Fittings). Certa-Lok® shall comply with the latest revision of AWWA Standard C-900/C-905 Pine is made to ductile-iron pine equivalent outside diameter dimensions (DI OD), Class 235, DR 18 in 20' laying lengths, with twin gasket Certa-Lok® couplings, nylon splines, and rubber rings.

Fusible PVC Pipe: All Fusible PVC pipe shall be manufactured by Underground Solutions (by Aegion). Fusible PVC Pipe shall comply with the latest revision of AWWA Standard C900/C905. Pipe shall be Class 235, DR 18 unless specified otherwise on the drawings.

Cement Mortar Lined and Cement Mortar Coated Steel Pipe (CL&C): All cement mortar lined and coated steel pipe shall be fabricated from steel cylinder ASA schedule as indicated on the drawing, with ASTM A53 test pressure and ASTM A36 physical properties. Cement mortar protective coating shall be 3/4" for all pipe sizes. The lining shall be 1/2" for 12" and larger pipe and 3/8" for 6 and 8" pipe, and conform to the latest revision of AWWA C205 and NSE/ANSI 61 Standard. Cement Mortar Coating shall be reinforced with 14 gauge wire mesh or spirally wound wire in center of coating. All CL&C steel pipe required for the water main installation shall be as specified on the drawings. CL&C Pipe may be sourced from Southland Pipe or JIFCO, Inc.

Steel (Stl) Pipe: All Steel pipe shall comply with the latest revision of AWWA Standard C200. The size and pressure class for all steel pipe shall be as specified on the drawings.

Polyethylene (PE) Pipe: This section is for PE pipe for sizes 4" and larger and shall only be used when specified on the drawings. All PE pipe shall be high density polyethylene (HDPE) complying with the latest revision of AWWA Standard C906 and PPI PE 4710. PE pipe shall conform to the outside diameter for the ductile-iron sizing system (DI OD) in Table 4 of the latest revision of AWWA C906. For water main where working pressure is less than 100 PSI, DR 14.5 shall be used. For working pressure between 100 and 160 PSI, DR 11 shall be used. All PE pipe shall conform to NSF Standard #14 and #61. All PE pipe shall either be blue or have blue printing on it to designate its use as a potable water pipeline. HDPE pipe shall be DriscoPlex ® manufactured by Chevron Phillips Chemical

Pipe Fittings: All fittings shall be as specified on the drawings and shall be Ductile Iron complying with the latest revision of AWWA Standard C153 for push—on and mechanical joints fittings and C110 for flanged fittings. All fittings shall either be cement mortar lined in conformance with the latest revision of AWWA Standard C104 or coated with fusion—bonded epoxy inside and outside in conformance with the latest revision of AWWA Standard C116. All fittings shall be manufactured by U.S. Pipe, Tyler Union (by McWane), Sigma Corp., Star Pipe, or SIP Industries.

Restrained Mechanical Joint (MJ) Adapters and Flanged Adapters: All restrained adapters shall form to the latest revision of AWWA C111 and C110 for flanged adapters and AWWA C111 and C153 for MJ adapters. All restrained MJ and flanged adapters shall be manufactured by EBAA Iron, Sigma Corp. or Romac Industries, Inc.

Gate Valves: All gate valves shall meet or exceed the latest revision of AWWA Standard C515 for reduced wall, resilient-seated gate valves (or C509 for resilient-seated gate valves) and shall be provided with left hand to open, ductile iron (or cast iron) body with epoxy coating inside and outside complying with the latest revision of AWWA Standard C550, nut operated non—rising stem with 2" square operating nut, two 0-ring stem seals above the thrust collar and one below, O—ring gaskets and 304 stainless steel bolts and nuts on bonnet and stuffing box and EPDM rubber encapsulated wedge. All gate valves shall be manufactured by Mueller Company (PRATT), M & H Valve & Fitting Co., Kennedy Valve Co., Clow Valve Co., American Flow Control, American AVK Co., or U.S. Pipe. Two inch and smaller gate valves shall be Class 125 with standard thread. bronze with wheel, and be manufactured by Milwaukee (No. 105) or Nibco.

Butterfly Valves: Butterfly valves may be used for valves greater than 12" nominal size. All butterfly valves shall comply with the latest revision of AWWA Standard C504 and shall be provided with EPDM "V-type" packing, left hand to open, nut operated with 2" square operating nuts, ductile iron ody, stainless steel shaft, resilient seat and heavy duty actuator. All butterfly valves shall be

<u>Control Valves:</u> All control valves shall be manufactured by Cla—Val Company. Model number. body construction, and flange drilling shall be as specified on the drawings. The drawing may indicate that the control valve will be supplied by California Water Service Company. All valves shall have factory set controls or pilots as specified on the drawings. All control or pilot piping shall be copper with bronze fittings. Vaults for control valves shall be as specified on the drawings

Check Valves: Unless specified otherwise, all check valves shall be swing type with spring and lever and shall comply with the latest revision of AWWA Standard C508. The Valves shall have Class 125 flanged ends unless shown otherwise on the drawings. Check valves shall be manufactured by Mueller Company (PRATT), Clow Valve Co., M&H Valve & Fitting Co., or Kennedy Valve Co.

Valves for Tapping: All gate valves for tapping purposes shall be Resilient Seat Type valves. The valve for tapping shall be manufactured by Mueller Company (PRATT), Kennedy Valve Co. or Clow

<u>Tapping Sleeves:</u> All tapping sleeves shall be all stainless steel including flange and shall only be used when specified on the drawings. Tapping sleeves shall be JCM Industries Model 432, Mueller Company Model H304, Smith-Blair (by Xylem) 662-663 or Ford Meter Box style FTSS.

Valve Casings and Covers: All valve casings and covers shall be fabricated as shown on the latest

<u>"Ball Valves:</u> Two—inch ball valves shall be as shown on the drawing and shall be manufactured by Mueller Company, Ford Meter Box Company, A.Y. McDonald, Cambridge Brass or Milwaukee Valve. Blow Off Assemblies: All materials for blow off assemblies shall be as shown on the latest revision

Service Materials: All 1" and 2" service material specifications except copper tubing and plastic PE pipe shall be as shown on the latest revision of drawings CW—555, CW—436, CW—1020 or CW-1029 which includes alternate manufacturers. All service material specifications for services larger than 2" shall be as specified on the plan and/or as specified on the latest revision of the CW drawing for that size service.

<u>Saddles:</u> All saddles shall be as specified on the latest revision of the applicable size service standard drawing: 1" (CW-555/CW-1029) and 2" (CW-436/CW-1020). Saddles are excluded from the low lead requirement by the Assembly Bill 1953, and thus need not conform to NSF 61 standards.

Pipe or Tyler Union (by McWane)

<u>Copper Tubing:</u> All copper tubing shall conform to the latest revision of ASTM Specification B88, SDR9 and be Type K soft. Polyethylene (PE) Service Pipe: All PE plastic pipe for services shall comply with the latest revision

of ASTM D2239 with a Standard Code Designation of PE 4710. Dimensions and tolerance of pipe shall be as specified in Table 3 of the latest revision of AWWA Standard C901 for PC 200 SIDR7. This is a high—density polyethylene plastic pipe conforming to the inside—diameter dimensions of iron pipe sizes and having a 2500 psi pressure rating.

Meter Boxes: All meter boxes for 1" services and 2" services shall be as specified on the latest revision of drawings CW-555, CW-436, CW-1020 or CW-1029. All meter boxes for services larger than 2" shall be as specified on the plans and/or as specified on the latest revision of the CW drawing for that size service. All meter boxes for 1" services and 2" services shall be supported by placing bricks or 2"X 4" pressure treated lumber under two sides of the base of the meter

<u>Vaults:</u> Vaults for appurtenances other than meters (such as Check Valves or Control Valves) shall be as specified on the drawings.

Machine Bolts: All steel bolts and nuts used for flanged fittings, flexible couplings, or other bolted ppurtenances shall be 304 stainless steel or 316 stainless steel. Ductile iron bolts are acceptable when the appurtenance is made of ductile iron and comes with option of ductile iron bolts, such as mechanical joint fittings. Anti-gaul lubricant shall be used with stainless steel bolts & nuts (except factory supplied bolts on Hymax couplings which come pre-coated).

PVC High Deflection Couplings: All PVC high deflection couplings shall conform to the latest revision of AWWA C-900 and shall be manufactured by CertainTeed (by Westlake Piping and Fittings). PVC Closure Couplings: All PVC closure couplings shall conform to the latest revision of AWWA

C-900 and shall be manufactured by CertainTeed (by Westlake Piping and Fittings).

<u>Transition/Flexible Couplings:</u> All Transition/Flexible Coupling shall comply with the latest revision of AWWA Standard C219 and shall be furnished with gaskets. California Water Service Company may require flexible couplings to be epoxy coated if soil conditions are determined to be corrosive. If the flexible coupling is steel, the sleeve must be a minimum of 10 inches long. If the flexible coupling is ductile iron then a standard sleeve length may be used unless the drawing specifies otherwise. Flexible Couplings shall be Quantum Wide Range Coupling by Smith-Blair (by Xylem), FC2A by Ford Meter Box Company, Hymax by Mueller Company, or Extended Range Coupling by Romac Industries, Inc. The Extended Range & Quantum Wide Range couplings can be used to accommodate a wider range of outer diameter for the same nominal size pipes. The Alpha Joint

Restraint Coupling by Romac Industries, Inc. can be used when restraint is specified on the plans. Solid Sleeves: All solid sleeves shall be made of ductile iron and shall be manufactured by Tyler

Tracer Wire: Tracer wire shall be minimum #12 AWG solid copper wire with 45 mils of high iolecular weight polyethylene (HMWPE) insulation. UL Listed, rated for direct burial, color blue and installed with all pipe including PVC, polyethylene and ductile iron pipe. For installation details see the latest revision of drawing CW-850. Tracer Wire may be sourced from Agave Wire LTD, Northtown Company or United Copper Industries.

Fire Hydrants: All fire hydrants shall be as specified on the district specific drawing (CWF-380) or is approved by CWS district personnel. For typical Fire Hydrant details see drawing CW-380. Fire Hydrant Burys: All fire hydrant burys shall be manufactured from Ductile Iron to ASTM A536 standards and have a minimum working pressure rating of 200 PSI. Burys shall be manufactured by Clow Valve Co., South Bay Foundry, Sigma Corp., or Star Pipe.

Fire Hydrant Check Valves: All fire hydrant check valves shall be Clow LB400 by Clow Valve Co. or

#### SPECIFICATIONS FOR INSTALLATION OF DUCTILE IRON AND POLYVINYL CHLORIDE (PVC) PRESSURE PIPE AND APPURTENANCES

Permits: All specification sheets, city/county or other environmental permits necessary for the nstallation of facilities must be obtained by the Developer and be on the job site prior to and

during construction.

ompliance with all the Rules and Regulations of the California Occupational Safety and Health Act (CAL OSHA), Public Law 91—596, the "Williams' Steiger Occupational Safety and Health Act of 1970' required on this project. The work practices for all pipe shall be in accordance with the latest revision of the American Water Works Association Publication C-206 Standard for Field Welding of Steel Water Pipe. C—600 Standard for Installation of Ductile Iron Mains and their Appurtenances. C-602 Standard for Cement-Mortar Lining of Water Pipelines in Place, C-604 Standard for Installation of Steel Water Pipe, C-605 Standard for underground installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water, M23 Manual of Water Supply Practices for PVC Pipe—Design and Installation and M55 Manual of Water Supply Practices for PE Pipe — Design and nstallation. "Fusible PVC Pipe" shall be installed per manufacturer's recommendations.

Please note direct discharge of highly chlorinated water to the environment is expressly prohibited. Refer to "Specifications for Dechlorination of Flushed Water" for more information. The Contractor shall comply with environmental laws and regulations as set forth by all federal, state and local

Materials: All materials installed for the facilities to be constructed by the Developer's Contractor must comply with the drawings and "Specifications for Material". No materials are to be supplied o furnished by California Water Service Company ("Company") unless specifically indicated on the plans or special installations. All materials must be on the job site and inspected prior to start of onstruction. Any pipe, valve, or appurtenance whether installed or not, which in the opinion of the Company, does not meet the requirements of these specifications or otherwise found unfit, shall be rejected as being unfit, and shall be immediately removed from the job site.

Line and Grade: The horizontal and vertical alignment for installation of the pipe shall be established in the field by the Developer's Contractor in accordance with the plans and specifications. Location of water facilities including finished grades and elevations shall be staked with offsets on site by the Developer's Project Engineer prior to start of construction. Final elevations of installed facilities, meter boxes, valve covers, hydrants, etc. shall be signed off by the Company's representative prior to acceptance of facilities.

Cover: Under normal conditions all mains shall be covered to a depth of four feet below the finished grade over the pipeline, unless specified otherwise on the plans. Prior approval must be obtained from the Company to install mains with greater or less than four feet of cover.

<u> Separation between Water Mains and Non—potable pipelines or other Facilities:</u> Water mains shall b t least 10 feet horizontally from and one foot vertically above, any parallel pipeline conveying sewage (untreated, primary, or secondary), disinfected secondary recycled water, and hazardous fluids, unless specified otherwise on the plans. Water mains shall be installed at least 4 feet horizontally from, and one foot vertically above, any parallel pipeline conveyina tertiary recycled water or storm drainage. At crossings, water main shall be constructed no less than 45-degrees to and at least one foot above any pipeline indicated above. No connection joints shall be made in the water main within eight horizontal feet of the fluid pipeline. Water main shall not be installed within 100 horizontal feet of any sanitary landfill, wastewater disposal pond, or hazardous waste disposal site, or within 25 horizontal feet of the nearest edge of any cesspool, septic tank, sewag leach field, seepage pit, underground hazardous material storage tank, or groundwater recharge project. The State of California Department of Public Health Title 22 Article 4 Section 64572 "Water Main Separation" shall be followed when installations cannot meet the "Basic Separation Standards" minimum vertical clearance of twelve (12) inches shall be maintained between the water main and all foreign structures, and a minimum horizontal clearance of five (5) feet shall be maintained between water mains and other utilities including structures, piles, pier, etc. not mentioned above unless otherwise indicated on the plans or approved by the Company. Refer to "Pipeline Crossing Information" shown on the plans for information of water main installations crossing other proposed or existing facilities. The Company's approval must be obtained prior to making any changes from the plans. This includes changing grade or alignment to avoid structures, other pipes, manholes, or any other fixed objects which may be encountered during installation. Per the Company's standards, changes in cover over the pipeline may require the installation of a fabricated cement mortar line and coated steel offset.

<u>Workmanship:</u> The pipe shall be installed to a true line and grade except on curves where ductile iron pipe may be installed with joint deflections between adjacent lengths of pipe not to exceed 3 degrees for ductile iron pipe sizes 6", 8", and 12". PVC pipe shall not be deflected at joints for horizontal or vertical deflection. No joint deflection shall be allowed in joints between fittings and pipe. PVC High Deflection Couplings made by CertainTeed (by Westlake Pipe & Fittings) shall be used with PVC C-900 between adjacent lengths of pipe to obtain up to 5 degrees deflection at th joint when required.

When assembling a PVC pipe to an iron fitting, valve, or appurtenance (push-on), remove all but 1/4 inch of the factory-made bevel from the spigot end of the pipe. Bottom the pipe in the bell

Field—cut lengths of PVC and DI pipe may be used for making connections to valves, fittings, appurtenances, and closures where necessary. The cutting and beveling of the pipe for inserting int the bell shall be done by the use of a square cutting tool approved by the Company and manufactured for this purpose, without damage to the pipe. The bevel of the pipe shall be the same as required for the fitting

Trench Bottom: The bottom of the trench shall be smooth and free from pieces of rock or other material that would tend to scratch, puncture or break the pipe or damage the polyethylene encasement used on ductile iron pipe. If rocks or stones are encountered, they shall be removed to a depth of six inches below bottom of trench and the void filled with material tamped to grade A six—inch laver of sand shall be placed in the trench bottom to provide a firm, stable, and uniform support for the full length of the pipe, except at the joints where bell holes shall be dug two inches below the surface so that the pipe will not be supported by the joint. Under no rcumstances shall the bell hole undermine the support for the fittings or valves

Valves and other various fittings may be required to be supported by a concrete cradle if it is determined by the Company that the bedding in the trench bottom cannot be properly compacted

When an unstable subarade condition is encountered that could provide inadequate pipe support.

Company shall require additional trench depth to be excavated, refilled and compacted with suitable lo water main or appurtenance shall be laid in water, or when, in the opinion of the Company, th

trench conditions or the weather are unsuitable for construction. Any water main which has been submerged shall be removed from the trench and be relaid. The trench shall be dewatered whenever running or standing water occurs in the trench bottom and the removal shall continue until the pipe has been installed and the backfill has been placed to a sufficient height to prevent the pipe from being submerged in water.

IMPORTANT: All trench excavations shall be in accordance with the Rules and Regulations of the California Occupational Safety and Health Act (CAL OSHA). This includes all necessary shoring determined by either the depth of trench and/or soil conditions.

<u>Pipe and Appurtenances Handling:</u> All water main and appurtenances shall be carefully lowered into the trench by means of padded slings, hooks, pipe tongs, or other suitable equipment consistent with safety, in such a manner to prevent damage to the exterior and interior pipe or appurtenance surfaces. Under no circumstances shall any material be dropped or dumped into the trench. Any foreign material inside the pipe shall be removed and the interior of the pipe kept clean during installation. All water mains and appurtenance with damaged exterior or interior surfaces shall not be installed.

During installation, the open ends of the pipe shall be plugged or completely wrapped at night or when no work is in progress at that point to prevent entrance of trench water, animals, or other foreign matter.

On all pipe, a continuous strip of tracer wire (per material specification) shall be taped to the top exterior surface of the pipe per the latest revision of drawing CW-850. Tracer wire splices using appropriate connectors are required at all locations where the wire is cut.

polyethylene encasement shall be installed over ductile iron pipe, fittings, and appurtenances pe latest revision of AWWA Standard C105 Polyethylene Encasement for Ductile Iron Piping and per the plans and specifications, or as requested and directed by the authorized Company's representatives. specified on plans, V-Bio Enhanced Polyethylene Encasement by U.S. Pipe may be used to

Note: Ductile iron fittings and appurtenances installed on PVC C-900 main shall require polyethylene encasement with a 2—foot overlap onto the PVC main. This overlap shall be secured to main per the latest revision of AWWA Standard C105.

Rubber Ring Joints for PVC C-900 and Ductile Iron Pipe: Push-on type rubber ring joints with rubber rings for integral bell ends shall be joined as follows: The ring groove, bell socket and plain end should be wiped clean. Insert the gasket making sure that it faces the proper direction and that it is correctly seated. The plain end shall be beveled and free of any sharp or ragged edges which may damage or dislodge the gasket. Lubricate the entire outside end of the pipe including the pipe bevel, also lubricate the exposed portion of the rubber ring gasket in the bell (See "pipe joint lubricant" below). Push the plain end into the bell by hand or with the use of a bar and block until it is appropriately seated per pipe manufacturer's recommendations, keeping the joint straight while pushing. Construction machinery shall not be used to push the pipe into a pipe bell end or a fitting bell end. After assembly, the resulting position of the rubber ring shall be checked with a feeler gauge.

f "Field Lok" or "Sure—Stop" gaskets are specified on the plans, the gaskets shall be installed in

f "TR FLEX", or "Flex—Ring" restrained joint system is specified on the plans, the joint assembly

shall be installed in accordance with the manufacturer's recommendations

lf PVC "Certa—Lok" Restrained Joint Pipe is specified on the plans, the joint assembly shall be installed in accordance with the manufacturer's recommendations

Pipe Joint Lubricant: Pipe joint lubricant shall be as specified by the pipe manufacturer and shall

pe NSF approved for use in potable water systems. Mechanical Joints: Mechanical joints shall be joined as follows: The socket and plain end should be wiped clean and any excess coating in the bell should be removed. The plain end, bell socket, and

he seating of the gasket in the socket and to help the various parts slide together along the pip Place the gland on the plain end with the lip extension toward the plain end of the pipe, followed by the gasket with the narrow edge of the gasket toward the end of the pipe. Insert the pipe into the socket and press the gasket firmly and evenly into the gasket recess. Keep the joint straight during the assembly Push the gland toward the socket and center it ground the pine with the gland lip against the gasket. Insert bolts and hand tighten nuts. Partially tighten the bottom bolt first; then the top bolt; next the bolts at either side, and finally the remaining bolts. Repeat this rocess until all bolts are torqued to a value between 75 and 90 ft—lbs.

restrained mechanical joint adapters are specified on the plans, the adapter assembly shall be nstalled in accordance with the manufacturer's recommendations.

Underground Protection: All flexible couplings, bare steel, MJ x MJ sleeves, and all bolts (including tainless steel) shall be protected as follows:

he entire area of the fitting should be dry and free of dust, dirt or other foreign matter. Rust or other foreign material should be removed by scraping or wire brushing. Wiping with dry clean cloth may be necessary to remove particles from brush cleaning. Any oil or grease must be emoved using a low residue volatile petroleum solvent before application of grease and wrapping. he exposed area should be coated with a heavy coating of Metal Guard #301 or Corrosion Guard CG15 grease by the glove method to a thickness of at least 1/4".

The entire grease area should be firmly wrapped with at least two layers, half lapped, of a woven alass filament mesh (Res or Bit Wrap, 4" wide). Metal Guard #301 or Corrosion Guard CG15 grease with a minimum of 1/4" thickness should be applied between each layer during wrapping, working the grease into mesh openings.

he entire mesh wrapped area of the fitting should be covered with a third and final coating of a least 1/4" thick of Metal Guard #301 or Corrosion Guard CG15 grease by the glove method. Two layers of polywrap, half lapped, should be firmly applied over all areas of the coated and wrapped fittings. Backfilling may follow immediately after this wrapping.

Thrust Blocks: Concrete thrust blocks shall be provided for all fittings to prevent movement when the main is under pressure. This includes tees, ells, reducers, caps and plugs. Forms are required and are to be provided by the Developer's Contractor. These forms shall be smooth, mortar tight and of sufficient strength to maintain shape during the placing of the concrete. All concrete thrust blocks shall be constructed per the latest revision of drawing CW-435 or as specified in the

Embedment Backfill: The embedment backfill is 6 inches of sand bedding below the pipe and 12 inches of sand backfill above the pipe (see sand definition below). Care must be taken to compa the sand backfill material solidly around and under the pipe. Small tampers and vibrators are allowed for compacting near the pipe and over the pipe after a minimum of 6 inches of sand backfill has been placed over the pipe. Flooding, jetting or puddling may be employed for compaction in the first lift although great care must be taken to prevent drainage or flotation of the pipeline. Apply only enough water to give complete saturation. Erosion of support at the pipe sides and bottom by water jetting must be prevented. Rocks or hard lumps are not permitted in the embedment backfill or final backfill.

Sand is defined as material free from organic matter and clay with a sieve gradation by weight as Sieve Size % Passing Sieve

Final Backfill: In areas where required, the permanent pavement and temporary pavement replacement must comply with specifications of the local governing authorities. All backfill above the sand embedment backfill must meet compaction requirements of the local governing agency. All pavement broken shall be replaced in strict accordance with the requirements of the local uthorities, or lacking local requirements, in accordance with the latest revision of drawing CW—236.

95-100

Other Facilities: All existing facilities, such as but not limited to sewers, storm, gas mains, water mains, telephone conduits, and power or telephone poles which may be located close to trench operations must be protected by the Developer's Contractor. If any of these facilities are damaged by the Developer's Contractor, repairs shall be made to the satisfaction of the interested parties at the Developer's Contractor's expense.

Valve Casings and Covers: A valve casing with cover shall be installed for each gate valve, butterfly valve, blow off assembly or when specified on the plans per the latest revision of drawing CW-439. The valve cover and frame for valves in paved and unpaved areas shall be per the latest revision of drawing CW-14. The valve cover frame shall be set in a ring of concrete a minimum of 24" in diameter and three inches thick or per local governing agency's standards whichever is areater. Al valve casing covers must be placed flush with the finished grade of the surrounding area.

Blow Off Assemblies: A blow off assembly as shown on the latest revision of drawing CW-122 shall be installed for each dead end capped main. The assembly is to include a valve casing and

Services and Meter Boxes: Services and meter boxes shall be installed as shown on the latest revision of drawings CW-555 for CW-1029 for 1" services, CW-436 or CW-1020 for 2" services, and for larger than 2" services as designated on the plans and/or the latest revision of the CW drawing for that size service. The 1" and 2" service pipe shall be installed at a depth of 30" or more from finished grade over the service pipe and in no event shall the depth be less than 18". The Developer's Contractor must get prior approval from the Company to install service pipe with less than 30" of cover

with finished grade of the surrounding area at the meter box cover. The meter boxes for 1" and 2" services shall be supported by placing 2"x4" treated lumber or bricks on two sides of the meter x's base. Avoid postal and street pedestals, driveways, trees/bushes, fencing, sewer lines, and Saddles and saddle tappina are required for all service connections made on PVC pipe. When

All meter box locations must be approved by the Company and the boxes must be installed flush

making this type of connection, proper equipment must be used which attaches to the corporation stop permitting the cutting tool to be fed through the corporation stop to cut a hole in the pipe. It is important that the cutting tool be a sharp shell type (hole) cutter which will retain the coupor and be designed to accommodate walls as heavy as DR 14. Thé shell cutter shall be lubricated or the outside only and not on the inside of the cutter with a recommended lubricant. Do not drill o hole in the PVC pipe with a twist drill or auger bit.

Direct tapping machines for service connections on ductile iron pipe must be approved by the Company prior to direct tapping ductile iron mains. Plastic PE pipe is to be cold flared to match recessed fittings or is to have outside end bevels for Insta-Tite fittings. Forming tool for bevels shall be Mueller's beveling tool number H10817 or approved equal. Stiffeners shall be used on all PE pipe with compression connections.

Only the Company is allowed to make the connection to the existing system. The Developer's Contractor shall furnish to the Company the necessary fittings, valves, pipe, and joint material required to connect the new mains to the existing system.

The Developer's Contractor must adjust from the nominal line and grade to match the existing

The Developer's Contractor is to complete the piping and maintain the specified clearance from existing main as shown on the drawings. The Developer's Contractor shall make the excavation for the tie-in. The trench shall be left in a safe condition for the Company to complete the connections. If the trench is considered unsafe for workers, the Company may require the Developer's Contractor to return and adequately excavate for the tie-ins at the Developer's Contractor's expense. After the Company has inspected the connection, the Developer's Contractor

shall install concrete thrust blocks, install valve casings and covers, and backfill the excavation. The Developer's Contractor shall then replace any pavement that was cut for the excavation.

he Company reserves the right to perform the tie—ins to the existing system if they desire. In thi situation, the Contractor will not be paid for the tie-ins as bid.

<u>Pressure Test:</u> Prior to any testing, at least seven days should elapse after the last concrete thrus block was poured if Type I portland cement was used and three days if high—early—strength Type II portland cement was used. A preliminary pressure test shall be carried out by filling the mains wit water and allowing them to stand under regular system pressure for a period of at least twenty-four hours. After completion of the preliminary test, the Developer's Contractor shall make hydrostatic test by raising the pressure in the main to 50 pounds per square inch above the normal static pressure at the point of observation with a minimum test pressure of 150 pounds per square inch. A calibrated pressure chart recorder and a water meter shall be provided by the Company. The hydrostatic test shall not be conducted without a Company's representative present. he pressure that the test is started at shall be maintained for a minimum of four hours. The test shall start and finish at the same pressure. If there is a pressure drop, the Developer's Contractor shall pump more water into the main through the water meter to bring the main back to its starting pressure. The leakage is the calculated volume of water pumped into the main through th meter. The leakage shall be measured accurately during the test period to determine that the leakage rate does not exceed the values shown in Table IA for ductile iron pipe and Table IB for PVC C-900 pipe. There shall be no leakage, zero gallons per four hours test period at test pressure for the portion of pipeline that is steel pipe CL&C with welded joints, HDPE pipe with fused joints, and fusible PVC pipe. An air test may be used as an alternate method on the steel pipe CL&C welded sections. Test pressure to be held for a four-hour duration, with no volumetric loss during test period. A calibrated pressure chart recorder will be provided by the Company. The necessary taps, connecting pipe, and valve fittings shall be provided by the Developer's Contractor Any leaks or failures that develop during the test shall be repaired by the Developer's Contractor

the mains fail to meet the requirements of the hydrostatic test, the Developer's Contractor shall, at his expense, make repairs to reduce the leakage. The repair work shall be continued until a

Disinfection of Mains: All mains that are installed by the Developer's Contractor shall be disinfected by the Contractor in accordance with the "Specifications for Disinfection of New Mains."

<u>aspection:</u> The Company reserves the right of access to the work at all times for the purpose o inspecting and the Developer's Contractor shall permit the Company's representative to make an inspection at any time. The Developer's Contractor shall notify the Company's local manager at least 48 hours prior to any work being started at the project site. The Company will normally provide no more than 2 inspections per day during normal working hours. The trench must be left open until the Company has inspected the new installation and approved that portion of trench to be covered. If the trench is covered prior to the Company's inspection, the Developer's Contractor will be required to uncover the trench at the Developer's Contractor's expense.

Protection: The Developer's Contractor shall at all times provide suitable and adequate danger signals and barricades. If necessary, the Developer's Contractor shall also provide temporary bridges across the trench to permit free ingress and egress to and from private driveways or traveled roads or streets. No street shall be closed unless a permit has been obtained from the appropriate

Specifications and Drawings: Specifications and drawings shall be taken together, and anythina shown on the drawings and not covered by the specifications or covered by the specifications and not shown on the drawings shall be considered as though it were covered by both specifications and drawings. Any points of disagreement should be referred to the Company's representative as soon

s possible to resolve any possible misunderstanding

Clean Up: Upon completion of the work, the Developer's Contractor shall remove all rubbish and waste materials resulting from the Developer's Contractor's operations and leave the ground along the route of the pipeline in a neat and clean condition. The Developer's Contractor shall be esponsible for the removal of all excess spoil from the trench excavations, the Company shall no accept any responsibility.

<u>Guarantee of Workmanship:</u> Notwithstanding Owner's acceptance of the new facilities, the Developer's ontractor shall guarantee all of his workmanship for a period of one calendar year from and afte acceptance of the work by the Owner. The Developer shall be responsible for having the Contractor o repair and make good any defects or imperfections in the work at his sole cost and expense. I deficiencies develop during the Guarantee calendar year, such as but not limited to: leaks in the pipeline or appurtenances, settlement of trenches, or deteriorating pavement due to faulty or mperfect workmanship, the owner retains the right of making repairs and the Developer is esponsible for the cost of said repairs.

esponsible for the cost of said repairs.								
TABLE IA								
ALLOWABLE LEAKAGE PER 1000 FT. OF DUCTILE IRON PIPELINE								
Average Test Pressure	verage Test Pressure Nominal Pipe Diameter — inches							
	6	8	10	12	14	16	18	24
(PSI)			GALLONS	PER HO	UR (GPH)	*		
200	0.57	0.76	0.96	1.15	1.34	1.53	1.72	2.29
175	0.54	0.72	0.89	1.07	1.25	1.43	1.61	2.15
150	0.5	0.66	0.83	.99	1.16	1.32	1.49	1.99
If the pipeline under test contains sections for various diameters, the allowable leakage will be the sum of the computed leakage for each size.								
TABLE 1B								
ALLC	WABLE LE	AKAGE P	ER 1000	FT. OF	PVC C-90	00 PIPELI	NE	

### ALLONS PER HOUR (GPH)\* 0.76 contains sections for various diameters, the allowable leakage wi be the sum of the computed leakage for each size. For example, Allowable Leak for 500° of " PVC under test pressure = $500^{\circ}/1000^{\circ} \times 0.66$ GPH x 4 Hour = 1.32 Gallons SPECIFICATIONS FOR DISINFECTION OF NEW MAINS

Nominal Pipe Diameter - inches

#### BASED ON THE PROCEDURES OUTLINED IN THE LATEST REVISION OF ANSI/AWWA C651

**GENERAL INSTRUCTIONS:** 

verage Test Pressure

Precautions shall be taken to prevent soiling of pipe, fittings, valves and other materials. Pip and fittings shall be stored so as not to accumulate mud or water, and all other materials shall be stored in a clean, dry location. Particular care shall be taken to keep rubber gaskets and pipe ends clean, dry, and out of the sun to avoid degradation of materials. All pipe shall be free of foreign materials and debris before lowering the pipe into the trench.

If at any time chemical contamination occurs (e.g. hydraulic oil, gasoline, diesel, etc), the pipe sections exposed to the contamination shall be replaced and not used for potable water

minimum of 12.5% sodium hypochlorite prior to lowering the pipe into the trench.

f dirt or debris enters the pipe, the interior surface of the pipe shall be cleaned and swabbed with

mpletely wrapped to prevent the entrance of water, foreign material or small anima Loading of new mains: A reduced pressure principle (RP) backflow prevention assembly (USC approved and lead-free compliant) is required to be installed in line with the domestic supply on all new main installations to prevent any heavily chlorinated and/or potentially contaminated water rom entering the distribution system. The RP must be sized appropriately to factor pressure loss

through the assembly while still meeting adequate flushing velocity greater than or equal to 3.0

ft/sec. If it is anticipated that scouring velocity of 3.0 ft/sec cannot be achieved, flushing at the

When the main is left unattended for any length of time, the ends shall be plugged or

naximum flow rate possible for a minimum 3 total pipeline installation volumes is required. he Developer's Contractor is responsible to provide and test the backflow prevention assembly upor nitial installation and each time it is relocated per Title 17 Article 2, Section 7605 (d). Prior to oading a new main with potable water and/or liquid sodium hypochlorite, a passing test report must be provided to California Water Service Company's ("Company") Inspector who will maintain a ecord and document the make and model number, serial number, and most recent test date of

the backflow prevention assembly on the New Main Disinfection Report in non—erasable ink or pen:

Apply the NSF-60 approved hypochlorite solution or tablets, using one of the methods

The Company's Inspector is to measure the chlorine concentration to ensure that a minimum 5 ppm concentration has been applied (not to exceed 200 ppm). The initial reading must be ocumented on the New Main Disinfection Report in non—erasable ink or pen writing. Samples with high chlorine concentration must be analyzed with a high range total chlorine test kit. Hach Model Number CN—21P or equivalent may be used for the initial dosage test. The chlorine test ki must use non-expired reagents and shall be verified on a periodic basis prior to field use.

The Company's inspector is to obtain the temperature reading at the time of loading, and hlorinated water to stand therein for a contact period of at least twenty—four (24) hours. If the water temperature is less than 41°F (5°C), the water shall remain in the pipe for at least forty—eight (48) hours. The Company's Inspector is to measure the chlorine residual after the

When using the chlorine tablet method, there must be a detectable ( $\geq$ 0.2 ppm) free chlorine esidual at the end of the required hold time.

When using hypochlorite solution method, the free chlorine residual must be at least 10 ppm at t end of the required hold time. If the chlorine concentration has dropped to less than 10 ppm, the the mains must be thoroughly flushed and re-loaded, superchlorinated by the continuous feed: method, and the required contact period shall be repeated due to the high chlorine demand. Equipment used to superchloringte by the continuous feed method will be provided by the installing

The Company's Inspector must measure or obtain upstream distribution system chlorine esidual, which will be used for comparison after flushing. The main must be flushed thoroughly a all available blow offs and hydrants. (See Specifications for Dechlorination of Flushed Water). After lushing, the chlorine residual coming out of the new main must match the chlorine residual entering the new main, indicating that adequate flushing has been performed. The contractor should re—install the caps/plugs back on the blow off assembly to prevent debris from entering the blow off after flushina. The Company's Inspector must document the final chlorine residual on the New Main Disinfection Report in non-erasable ink or pen writing.

After chlorine contact time has been met and satisfactory chlorine residual is observed, the ompany's representative will collect two consecutive bacteriological sample sets at a minimum of 16 to 30 hours apart and have them analyzed for Total coliform, E.coli, and heterotrophic plate

The samples should be taken from a combination of a blow off illustrated in the latest revision o drawing CW-638, a sampling station illustrated in the latest revision of drawing CW-914 or a service located near the end of the chlorinated section. All sample taps must be evaluated for the potential for contamination, cross-connections, or other factors that may result in non—representative sampling. The hose bib sampling device is recommended for any sample collected from a service hose bib.

accordance with the latest revision of AWWA standard C651, samples shall be collected at least every 1,200 ft., at the end of the installed pipeline, and at each branch or dead—end. I Total coliform, E.coli, and HPC results must be documented on the New Main Disinfection Report n non—erasable ink or pen writing. A copy of the laboratory results must also be attached to the

New Main Disinfection Report. If the bacteriological tests are positive, or if the HPC results are greater than 500 CFU/ml, urther flushing and confirmation samples will be necessary. Any positive follow—up sample tests or HPC>500 CFU/ml requires the Contractor to thoroughly flush, re—load, and superchlorinate the new nain by the continuous feed method. Repeat Steps 9-10. All sample results (original and confirmation) must be documented in the appropriate location on the New Main Disinfection Report non-erasable ink or pen writing. The Water Quality department must be notified if the acteriological and HPC results continue to show positive results.

The Company's Inspector and Supervisor will complete, sign, and submit the New Main isinfection Report to the Water Quality Program Manager (WQPM) for review and approval. Approval will be based on two sets of sample results that are absent of total coliform, E.coli, HPC less that 500 CFU/ml, and a final chlorine residual that is representative of background residual in the distribution system. Refer to the New Main Disinfection Policy for additional details. The WQPM will sign and approve the Report if the main is determined acceptable to be placed into service based

Before a tie-in is performed, the inside surface of all materials such as the tee, pipe nipples, couplings, and tapping sleeve must be swabbed with NSF 60 approved12.5% sodium hypochlorite solution, in accordance with the latest revision of AWWA Standard C651.

After the final tie—in has been completed, a bacteriological sample must be collected downstream of the tie-in point to ensure no contamination is introduced during the tie-in work. All sample taps must be evaluated for the potential for cross—contamination, cross connections, ther factors that may result in non-representative sampling. The hose bib sampling device is ecommended for any sample collected from a service hose bib. Where possible, the downstream solation valve shall be left in the closed position until sample results indicate the tie—in did not ntroduce contamination

Documentation including the New Main Disinfection Report, laboratory results, and backflow prevention assembly test report details shall be placed in the project folder for record keeping purposes.

Safety Notes: Chlorine tablets and solutions should be handled with care, as they are danaerous to he eyes, irritating to the skin, and will damage shoes and clothing. Minimize your exposure by ading and having the M.S.D.S. available should an emergency occur. Follow the guidelines for protecting yourself, asking your supervisor when in doubt and by erring on the safe side by using spirators, protective clothing and other protective equipment.

<u> Method No. 1 — Calcium hypochlorite Tablet Method</u> his method works well for short jobs and for small diameter pipe of any kind. This method canno be used where trench water has entered the main. The main cannot be flushed prior to sinfection, so the method requires that the pipe be kept clean durina lavina.

Jse Dow Corning 732 Sealant or equivalent (NSF 61 approved) to fasten the required number of 5—gram calcium hypochlorite tablets (See Tables II) to the op and at the upstream end of each length of pipe, including branch lines and Cement lined and Coated Steel (CL&C) offsets. At least one tablet shall be blaced in each hydrant branch as well as any other plumbed appurtenances. Tablets must be NSF 60 approved and have 65% free chlorine. The tablets ma e fastened to the pipe before it is placed in the trench provided the top of pipe is marked to avoid the possibility that the pipe may be rotated.

Tablets should be removed at the end of the day, when pipe is not installed in the ground the same day tablets are applied. Reuse those tablets in the following days if still intact. This is to prevent moisture from reducing the amount of chlorine available for disinfection. When using flexible couplings, apply NSF 60 approved sodium hypochlorite with a spray bottle method in the annular space between the coupling and the

fill the pipe very slowly with potable water at a velocity of no more than 1ft/sec to eliminate air pockets and ensure calcium hypochlorite tablets do not pecome detached from the interior pipe surface and proceed as outlined under Step 7 in the "General Instructions"

TABLE II

	Number o	of 5—gram Calciu	ım Hypochlorite	tablets Specified	for Disinfection	of at least 25	opm						
	DIAMETERS												
Length of	4"	6"	8"	10"	12"	14"	16"	18"					
Section	# of tabs	# of tabs	# of tabs	# of tabs	# of tabs	# of tabs	# of tabs	# of tabs					
≤13'	1	1	1	2	3	4	4	6					
18'	1	1	2	3	4	5	6	7					
20'	1	1	2	3	4	5	7	8					
30'	1	2	3	4	6	8	10	12					
40'	1	2	4	5	7	10	13	16					

Method No. 2 — Continuous Feed Method with 12.5% Liquid Chlorine (Sodium hypochlorite) This method is general in scope and must be used when it is necessary to re—chlorinate an existing main, and it may also be used on new mains.

This method consists of introducing a 12.5% chlorine solution into water which is being used to fill water main. The 12.5% chlorine solution must be NSF 60 approved and can be purchased through several vendors.

Calculate the total volume (ounces or gallons) of 12.5% hypochlorite solution needed, based on the pipe diameter and section length (See Table III and

2. Choose a suitable filling rate and determine the time required to fill the water main from Table IV. Calculate the 12.5% hypochlorite dose rate using the results from 1 and 2 above. Using the examples below Table III & Table IV, the dose rate would be: 0.8 gal/52.0 min.=0.015 gal/min. or 100 ounces/52.0 min.=2 ounces/min for a 1000ft section of 8 inch diameter pipe being filled at flow rate of 50

. It is recommended to use chemical feed pump designed to introduce the 12.5% hypochlorite solution into the main at a constant rate. The feed pump and method must be approved by the Company prior to loading the main. Adjust the feed pump to the dose rate. Introduce the solution through a corporation cock, blow off, or service connection at or ahead of the inlet end of the water main to be disinfected.

After flushing the main thoroughly, adjust the filling rate by measuring the time required to fill a five-gallon or other suitable container. Begin introducing the 12.5% hypochlorite solution into the main, and continue until a chlorine residual test on a sample taken from the discharge end

Close the filling valve or blow off, and stop introducing hypochlorite solution. Disconnect and flush the feed pump and equipment thoroughly with fresh

3. Proceed as outlined under Step 7 in the "General Instructions.

of the main shows at least 25 ppm chlorine.

Section

TABLE III 12.5% Liquid Hypochlorite Method of Main Chloringtion Amount of 12.5% Liquid Hypochlorite (ounces)

Specified for Disinfection of at least 25 ppm

Amount in oz ppm Amount in oz ppm Amount in oz ppm Amount in oz ppm Amount in oz ppm Amount in oz ppm Amount in oz ppm Amount in oz ppm 6 28 8 27 10 26 13 29 
 1
 75
 1
 33
 2
 37
 3
 36
 6
 25
 9
 31
 11
 28
 14

 1
 50
 2
 44
 2
 25
 4
 32
 9
 28
 13
 28
 16
 25
 21

 1
 37
 2
 33
 3
 28
 5
 30
 12
 25
 17
 27
 22
 26
 27
 Table III is used to calculate the total ounces of 12.5% hypochlorite required to produce water with a free chlorine concentration of at least 25 ppm

Well II												
	DIAMETER OF PIPE BEING DISINFECTED (INCHES)											
	4	6	8	10	12	14	16	18	20			
(GPM)			TIME REQUIRED	TO FILL 100	FEET OF PIPI	E (MINUTES)						
10	6.5	14.7	26.1	40.8	58.8							
20	3.3	7.3	13.0	20.4	29.4							
35	1.9	4.2	7.5	11.7	16.8							
50		2.9	5.2	8.2	11.8	15.0	20.9					
75		2.0	3.5	5.5	7.9	10.7	14.0					
100			2.6	4.1	5.9	8.0	10.4	13.2	16.3			
Table IV is	Table IV is used to estimate the time required to fill the pipe with chlorinated water. For example: A flow rate of 50 gpm will fill 1000 feet of											

TARLE IV

SPECIFICATIONS FOR DECHLORINATION OF FLUSHED WATER

8-inch pipe in  $10 \times 5.2 = 52.0$  minutes.

100/128 ounces/gal. = 0.8 gal.

Cafety Notes: While it is unlikely that these procedures will produce a hazardous reaction, employees should proceed with caution when working with calcium thiosulfate or Vita—D—Chlor (Ascorbic Acid). Minimize your exposure by reading and having the M.S.D.S. available should an emergency occur. Follow the guidelines for protecting yourself, asking your supervisor when in doubt and by erring on the safe side by using respirators, protective clothing and other personal protective equipment,

The discharge/disposal of all chlorinated water generated from the procedures in the "Specifications for Disinfection of New Mains" shall be the Contractor's

responsibility. The Contractor shall comply with all federal, state and local discharge/disposal requirements for chlorinated water including but not limited to the list At a minimum, the Contractor must meet a total chlorine residual of the 0.01mg/l in the discharge water.

For example: A 20 ft. section of 8-inch pipe needs 2 ounces; so for 1000 ft. (50-20 ft. sections), 50 x 2 = 100 ounces.

The Contractor shall use Best Management Practices to control erosion and sediment from entering receiving water body. At a minimum, the Contractor must document the discharge using Cal Water BMP Discharge form. If Cal Water has obtained a NPDES permit for this activity, the Contractor will be notified about the permit requirements. The Contractor will then be responsible meet the discharge requirements.

the onset of discharging the water and at frequent intervals throughout the dewatering of the pipe. The Contractor shall notify the local agency to inform them of Determine the chlorine concentration of the water to be flushed. If the water to be flushed contains a detectable level of chlorine, then that water must be dechlorinated as follows:

methods. The dechlorinated water will be tested for chlorine residual to verify that no detectable amount of free chlorine is present. This testina will take place fron

l. If dechlorination of the water is required, then the chlorinated water that is discharged to a storm drain shall be dechlorinated by water industry accepted

Please note: The use of the dechlorinating agent Captor (30% calcium thiosulfate) or Vita—D—Chlor (Ascorbic Acid Tablets) is recommended by the Company. Calcium thiosulfate and Vita—D—Chlor tablets are less hazardous than other chemicals, and will not deoxygenate the water when marginally over—applied. Gross over—applicatio of any dechlorinating agent is unacceptable because of its potential to deoxygenate a receiving water body. THE USE OF ANOTHER DECHLORINATING AGENT MUST BE

Captor Solution Manufacturing Recommendation:

<u>Vita-D-Chlor Manufacturing Recommendations</u>

pH = 6.5 to 8.5

be increased by more than 5° F.

ii. 2.1 to 50+ mg/L: Use straight 30% Captor solution.

Prepare a Captor solution for water containing the following chlorine residuals: . Less than 1 mg/L: add 2 cups of Captor to 25 gallons of water. This will dechlorinate 25,000 gallons of water with a chlorine residual of 1mg/L or less.

Calculate the volume of the new main in gallons as follows: (Length of pipe)(Diameter of pipe)(Diameter of pipe)(0.785)(7.48 gal./ft.3 )

c) Calculate the volume of the 30% Captor needed to dechlorinate 1 to 50 mg/L chlorine residuals for the volume calculated in b: (Vol. of pipe)(Chlorine concentration)(1.45) gal (300,000 mg/L Captor)

 Calculate the pounds of Vita-D-Chlor to be placed in dechlorinating device as follows: (Diameter of pipe) (Diameter of pipe) (Chlorine Concentration) (Length of pipe) <u>inches</u> <u>mg/L</u> 1.112,300

Application of dechlorinating solution: Refer to Cal Water's Best Management Practices (BMP) Guidance on examples to apply dechlorinating agent. Cal Water's BMP Guidance Manual is available to the Contractor for reference upon request. Using Cal Water's BMP Discharge Form, check all discharged water quality parameters indicated on the discharge form at the storm drain inlet after the discharged water has passed through all implemented BMPs for pollution control (i.e. Dechlorination, sediment controls, erosion controls). Cal Water's BMP Discharge

b. Best Management Practices must be used when discharging water into a storm drain. This includes use of sediment control BMPs (i.e. gravel bags around storm drains inlets) and erosion control BMPs (i.e. straw wattles, etc).

Total Chlorine Residual = < 0.01mg/L (Per EH&S BMP manual) Turbidity — Turbidity limitations are dependent on the natural turbidities of the receiving water bodies. Receiving Water Background Incremental Increase

6. The installing contractor shall follow the water quality objectives stated below.

Dry Creek < 50 NTU > 100 NTU 10% of background Femperature — Temperature limitations are dependent on the natural temperature of the receiving water bodies. The receiving water body temperature cannot **ENGINEERING** 

INFORA

DEPARTMENT

<u>R8- Update Specs</u> <u>D.LE 04/08/2024</u>

DATE: INIT. PLAT SHEET

N.T.S.

PERALTA/ D. LE

TECH REVIEW:

CHECKED BY:

04/19/2024

ALL

DRAWING NO.: CW - 832 - R7

SHT 1 OF 1



#### CALIFORNIA WATER SERVICE

**Visalia District** 216 North Valley Oaks Drive Visalia, CA 93292 *Tel*: (559) 624-1600

June 30, 2025

City of Visalia

RE: Riggen Widening Shirk to Kelsey.

The estimated cost of this widening project in Visalia is \$ 656,645.00. Of this cost, CWS will be paying \$644,474.00; the City of Visalia's portion is \$14,606.00. The remaining balance due is \$9606.00. The original deposit of \$5000.00 has been deducted from the total due.

Please submit your \$9606.00 check to California Water Service at 216 N. Valley Oaks Drive, Visalia, CA 93292. Attention: Allison Schackmann.

Upon completion of the work, an adjustment will be made to any difference between the estimated installation and income tax cost (amount deposited) and the actual cost of the work. Should it be necessary to make the main connection/installation after hours or on a weekend, it may result in a cost overrun. The difference will be refunded to the applicant if the actual cost is less than the amount deposited. The applicant will be invoiced for the difference if the actual cost exceeds the amount deposited. California Water Service will own the facilities installed.

If additional sources of water supply, irrigation service, and/or multiple services are on the property section I, page I-4 of the State of California Health and Welfare Agency Guidance Manuel for Cross Connection Control states that "The water user (property owner or consumer) has the primary responsibility to keep contaminants out of the potable water system. This responsibility begins at the user connection and includes any and all water distribution piping on the premises. If a cross connection or the potential for a cross connection exists, the water user shall install, have tested, and maintain backflow preventers at his own expense as directed by the water supplier or the health agency. The water user should be careful not to create cross connections when modifying his plumbing system."

All services requiring backflow devices per Rule 16 will be installed directly behind our meters. Attached are "Backflow Prevention Assembly Test Reports." Please complete the forms and return them to our office after the initial testing. The devices must be tested upon installation and annually thereafter. If you have any questions regarding backflow, please get in touch with our Cross Connection Control Specialist, Juan Cisneros, at Jcisneros@calwater.com or 559-618-0936.



Quality. Service. Value: calwater.com



#### CALIFORNIA WATER SERVICE

If an easement(s) is required, it is the developer's responsibility to write the easement description along with a plat drawing and submit it to California Water Service Company for review and approval. Once approved, the written description must be on our "Right of Way for Pipeline" form.

The applicant is responsible for marking any easements, right-of-way, or property lines in the field.

Please indicate your acceptance of the foregoing terms and conditions by signing at the bottom this letter, returning one copy to this office with the required balance due deposit. Since pipes and other materials may not be readily available at short notice, we recommend contacting us at your earliest convenience. The estimate is submitted as preliminary information only. Estimated costs, therefore, expire 30 days after the date of issue.

Should you have any questions or need additional information, please call 559-624-1689.

Sincerely,

Allison Schackmannn

Allison Schackmann Superintendent

Attachments W-9's

Project #00129573

Applicant's Acceptance

(On Site Contractor Contact Name, Phone # & Email)



Rev. 02/02/2015 Form No. 1290AR Calwater Install Project No. Drawing No.

Date:

00129573 VIS-6641 6/17/2025

\$9,606

## CALIFORNIA WATER SERVICE COMPANY - ENGINEERING DEPARTMENT DETAILED COST ESTIMATE \*RELOCATION\*

**VISALIA** District: Description of subdivision, tract or properties to be served: RIGGIN WIDENING-SHIRK TO KELSEY California P.U.C Land Use Classification: **REVISION 1** 15-D Total length of: \$536,047 2600 ft. of Ductile Iron pipe -Paid By CWS 12 in \$6,086 Irrig Services \$6,086 Irrig Services -Work By CWS \$54,400 Fire Hydrant Conn. -Paid By CWS CL&C Dbl. Offsets -Paid By CWS PC. MK. "X" and "X2" \$39,247 Special -Paid By CWS Tie-in to ex.Per Detail "A". w/Wrk by C \$14,159 n/a \$0 Special Facility Fee For Water Supply Special Facility Fee For Transmission Main n/a \$0 Sub Total 1 \$656,645 Cost by CWS Co. (\$644,474)Sub Total 2 \$12,172 Estimated Federal C.I.A.C. Tax \$1,826 Estimated State C.I.A.C Tax \$609 **Total Estimated Cost** \$14,606 Advance Deposit (\$5,000)

#### **REMARKS:**

1. The total estimated cost is based on the installation of facilities by California Water Service Company as shown on the drawing listed above.

Total Balance Due

- 2. The estimate is subject to acceptance by applicant within thirty days hereof.
- 3. All excess spoil IN TRACT is to remain trenchside and all excess spoil OFF TRACT is to be removed.
- 4. Federal tax factor of 15% and State tax factor of 5% is applied to domestic and irrigation services only.

6/17/2025

Cris Rosete, Manager of Engineering Distribution