

# A. General Project Information

- 1. Organization / Project Sponsor Name: McKinleyville Community Services District
- Project Name:
   4.5MG Water Storage Tank Construction
- 3. Has the organization implemented similar projects in the past? X yes no
- 4. If the project sponsor has worked with NCRP in the past, describe the project and outcome. MCSD obtained a Technical Assistance Grant in 2020 to prepare a McKinleyville Community Forest Framework Plan. BBW & Associates assisted the District in the preparation of the Plan that will serve as the backbone for the development of the McKinleville Community Forest, Forest Management Plan.
- 5. Please describe the qualifications, experience, and capacity of the project team that will be overseeing project implementation.

The District's Project Manager is Patrick Kaspari, P.E., the General Manager of the District. He is a registered Civil Engineer with 30+ years in the Water & Wastewater Industry including managing multiple Local, State & Federal Grants. He is also a member of the NCRP Technical Review Committee. He will be assisted by the District's Operations Director, James Henry who has 20+ years of experience in the water & wastewater industry and Nicole Alvarado, the District's Finance Director.

6. Is this project part of a larger project or program? If so, what effectiveness monitoring is being conducted and what are the results?

This project is part of the District's overall Capital Improvement Program. The District has a 20-yr CIP that is updated regularly. The addition of the 4.5MG Tank has been on the CIP for the last 10-yrs. The project will further benefit the regional interties project funded by Prop. 50 in 2013, which ties the HBMWD, MCSD, and City of Arcata's water systems together. The intertie project is monitored annually by Arcata and MCSD Staff, who assess the condition & functionality of all components.

#### 7. Project Abstract [500 characters max.]

Project is construction of 4.5MG water tank to help ensure continued water service to the communities of McKinleyville & Arcata. The watermain from HBMWD to MCSD passes under the Mad River, is over 50-years old, & is vulnerable to an earthquake or flood. A grant from the NCRP would leverage \$7,748,857 in Hazard Mitigation Grant funding & \$3,073,812 in MCSD matching funding, to cover the est. \$2.5M in increased costs associated with inflation, and allow for completion of this critical Project.



#### 8. Project Description [3,000 characters max.]

Project will mitigate loss of water service and associated loss of wastewater & fire protection services for the McKinleyville CSD (MCSD) and the City of Arcata. MCSD provides water service for approximately 16,700 people. The sole source of water to MCSD is an 18-inch cast-iron pipe from Humboldt Bay Municipal Water District (HBMWD) buried 16 feet below the bed of the Mad River. The pipe under the Mad River was constructed in 1973 and crosses the Mad River fault zone. There is a high potential for failure of this pipe during an earthquake on this or one of the surrounding faults. A failure of this line would result in loss of water services to MCSD for several days or months depending on the severity of the earthquake and the location of the damage. The mainline is also vulnerable to a large flood that could scour the bed of the Mad River & damage the pipe.

Project will consist of the construction of a 4.5-million gallon (MG) prestressed concrete storage tank on MCSD land. This will provide a key component for the ability of MCSD (& City of Arcata) water systems to continue to function after a large seismic or flood event. MCSD currently has two days of storage in the 2 existing 1MG & 2, 1.5-MG tanks if the connection to HBMWD fails. This is less than half of the min of 5 days recommended to help ensure continued water service. The addition of the new tank will provide 5+ days of storage. The importance of this project is reflected by the willingness of the FEMA/CalOES Hazard Mitigation Grant (HMG) program to fund this project. MCSD was able to secure a \$7,748,857 HMG (which requires a \$3,073,812 MCSD match) to fund the construction of the tank. CalOES released the initial funding in 2019 and MCSD completed the initial environmental and CEQA/NEPA studies as well as the 30% design of the project. CalOES then released the 2nd phase of the funding in 2021 and Kennedy Jenks completed the 60% design of the project in July 2022, including an update of the construction costs. The construction cost est. has increased by \$2,524,272 due to the increase in construction and material costs since the original grant application in 2018. This increase more than doubles the required match from MCSD from \$3M to over \$5.5M. Although MCSD has sufficient funds to cover the cost increase, this will seriously deplete MCSD's reserves. Any assistance from the NCRP would be greatly appreciated.

The project also benefits the City of Arcata. MCSD took advantage of the seismic retrofit of a Hwy 101 bridge to install a pipeline under the bridge. This pipeline was then connected to MCSD's system on the northside of the Mad River and Arcata's system on the south. This intertie allows MCSD to feed water to Arcata or vice versa if either system loses their water supply from HBMWD. The 4.5MG tank can provide extra days of supply if the connection to HBMWD is lost, which can be extended indefinitely if the intertie is used to feed water back and forth to refill storage.

#### 9. Specific Project Goals/Objectives



Goal 1: Ensure water supply reliabilty and resiliency for communities of McKinleyville and City of Arcata [100 characters max.]

Goal 1 Objective: Construct 4.5MG water storage tank to provide additional storage if the water main from HBMWD is damaged due to earthquake, flood or other reason [200 characters max.]

Goal 1 Objective: Leverage existing intertie between MCSD & Arcata to its fullest extent by providing sufficient storage to allow flexibility in providing water to either community Goal 1 Objective:

Goal 1 Objective:

Goal 2: Ensure economic justice for members of economically disadvanteged community Goal 2 Objective: Ensure disadvantaged & severly disadvantaged residents of McKinleyville have access to clean drinking water in the event of natural disaster that interupts water service from HBMWD

Goal 2 Objective: Ensure economically disadvantaged community has access to wastewater and fire fighting water in the event of loss of HBMWD mainline Goal 2 Objective:

Goal 2 Objective:

Goal 3: Ensure Public Safety

Goal 3 Objective: Provide sufficient water storage to ensure there is clean drinking water, firefighting water, and wastewater service to communities in the even of a natural disaster

Goal 3 Objective: Goal 3 Objective: Goal 3 Objective:

Additional Goals & Objectives (List)

Goal 4 - Leverage existing Hazard Mitigation Grant funding and MCSD matching funding to cover increased construction costs

## 10. Describe how the project addresses the NCRP Goals and Objectives selected. $\left[1,000\right.$

characters max.]

GOAL 1, O1:Respect local autonomy and knowledge... O2:Provide framework for intraregional cooperation...

MCSD is supplied water from the HBMWD's wholesale water system, which relies on its customers to have resilient water storage within each customer's service area. The additional storage will also benefit Arcata via water transfers thru the intertie

GOAL 2, O4:Ensure economically disadvantaged communities are supported...

MCSD serves an economically disadvantaged community

GOAL 4, O8:Ensure water supply reliability... O9:Improve drinking water infrastructure with focus on disadvantaged communities



Projects meet these objectives by ensuring a reliable water supply through improvements to infrastructure serving an economically disadvantaged community

GOAL 5, O11:Address climate change effects... O12:Promote local water use efficiency...

Project supports objectives by improving system resilience to wildfire and by reducing vulnerability of dependence on existing waterline under Mad River

# **11. Describe the physical, biological and/or community need for the project**. [1,000 characters max.]

Project will mitigate loss of water and associated loss of wastewater & fire protection services for the severly economically disadvantaged community of McKinleyville. MCSD provides water & wastewater service to approximately 16,700 people. The sole source of water to MCSD is an 18-inch cast-iron pipe from Humboldt Bay Municipal Water District buried 16 ft below the bed of the Mad River. The pipe under the Mad River was constructed in 1973 and crosses the Mad River fault zone. There is a high potential for failure of this pipe during an earthquake on this or one of the surrounding faults. A failure of this line would result in loss of water services to MCSD for several days or months depending on the severity of the earthquake and the location of the damage. The mainline is also vulnerable to a large flood that could scour the bed of the Mad River & damage the pipe. The proposed project also benefits Arcata via use of an intertie which allows MCSD to feed water to Arcata or vice vera.

#### 12. Describe the financial need for the project. [1,000 characters max.]

The project is partially funded by a FEMA/CalOES Hazard Mitigation Grant (HMG) and associated MCSD matching funds. MCSD was able to secure a \$7,748,857 HMG (which requires a \$3M MCSD match) to fund the design, permitting and construction of the tank. CalOES released the initial funding in 2019 and MCSD completed the initial environmental and CEQA/NEPA studies as well as the 30% design of the project. CalOES then released the 2nd phase of the funding in 2021 and Kennedy Jenks completed the 60% design of the project in July 2022, including an update of the construction costs. The construction cost est. has increased by \$2,524,272 due to the increase in construction and material costs since the original grant application in 2018. This increase more than doubles the required match from MCSD from \$3M to \$5.5M. Although MCSD has sufficient funds to cover the cost increase, this will seriously deplete MCSD's Working Capital and Catastrophe reserves.

# 13. Describe potential adverse impacts from project implementation and how they will be mitigated.

FEMA has completed the required NEPA permitting for the project and issued a Finding of No Significant Impact. MCSD has completed CEQA for the project including an Initial Study and Mitigate Negative Declaration (IS/MND). The MND has typical contruction mitigation measures including for reducing stormwater, noise and traffic impacts. The construction will also include minor temporary impacts to the fringes of an existing wetland and the MND outlines mitigation measures for those impacts.



- 14. Will this project mitigate an existing or potential Cease and Desist Order or other regulatory compliance enforcement action? yes in our lf yes, please describe. [500 characters max.]
- 15. Does the project address a contaminant listed in AB 1249 (nitrate, arsenic, perchlorate, or hexavalent chromium)?

yes in no If yes, provide a description of how the project helps address the contamination. [500 characters max.]

**16.** Describe how the project contributes to regional water self-reliance and addresses climate change. [1,000 characters max.]

The proposed project also contributes to regional self-reliance by leveraging an existing intertie between MCSD and the City of Arcata. MCSD took advantage of the seismic retrofit of a Hwy 101 bridge to install a pipeline under the bridge. This pipeline was then connected to MCSD's system on the northside of the Mad River and Arcata's system on the south as part of a Prop. 50 funded intertie project. This intertie allows MCSD to feed water to Arcata or vice versa if either system loses their water supply from HBMWD. The proposed tank can provide extra days of supply if the connection to HBMWD is lost, which can be extended indefinitely if the intertie is used to feed water back and forth between the entities to refill their respective storage. This also helps to ensure that the regional water system supplied by HBMWD has additional flexibility to provide water to the other member agencies in the event a large local natural disaster.

17. Does the project increase public safety with regards to flood protection, wildfire hazard risk reduction, increasing firefighting capacity, or in other ways contribute to regional emergency resiliency?

🛛 yes 🗌 no

Please explain. [500 characters max.]

Loss of water service to either MCSD or the City of Arcata of course also has a dramatic impact to the entities fire protection services. The additional storage tank, utilized with the intertie, will help ensure both entities firefighting ability following a natural disaster and will help ensure regional emergency resilience.

18. Does the project employ new or innovative technologies or practices, including <u>Decision</u>
 <u>Support Tools</u> that support the integration of multiple jurisdictions, including, but not limited to, water supply, flood control, land use, and sanitation?
 yes
 no
 If yes, please describe. [500 characters max.]



19. Describe the population served by this project, including any economically disadvantaged communities or Tribes that will directly benefit.

The community of McKinleyville, including the entire service area covered by this project, is classified as an Economically Disadvantaged Community. Portions of the community are also classified as Severly Economically Disadvantaged. The Yurok Tribe has also established tribal housing in McKinleyville which will be benefitted by this project. Wiyot, Hoopa, and Yurok tribal members living in McKinleyville will also benefit.

20. Describe local and/or political support for this project. [500 characters max.]

HBMWD & their 7 Muni customers (MCSD, Arcata, Eureka, Blue Lake, Fieldbrook GCSD, Humboldt CSD, Manila CSD) have a collaborative working relationship around protection of the Mad River watershed, system resiliency, water conservation, climate change, emergency response, etc. HBMWD and Arcata have been working closely with MCSD, not only on this project, but in a cooperative arrangement for years. This project continues that relationship and is supported by HBMWD, Arcata & Arcata FPD.

**21.** List all collaborating partners and agencies and nature of collaboration. [750 characters max.] Humboldt Bay Municipal Water District and the City of Arcata are active collaborators in the building of a resilient water supply for the Humboldt Bay regional and local water supply. This project will directly benefit both of those agencies and their customers. Additional MCSD storage will allow flexibility in the operation of the HBMWD regional system and will allow MCSD to backfeed the City of Arcata's water system if they have any issues with either their supply or storage. Both agencies are supportive of this project, but MCSD is taking the lead on it.

#### 22. Is this project part or a phase of a larger project?

Are there similar efforts being made by other groups? If yes to either, please describe. [500 characters max.]

⊠ yes — no \_ yes ⊠ no

This project is a component of the inter-agency cooperation in the construction of a resilient water supply and system for the Humboldt Bay area. It will further leverage an existing intertie between MCSD and the City of Arcata and will help HBMWD to ensure adequate water supply to all the regional customers in the event of a natural disaster.

# **B. Project Location**

- **1.** Describe the latitude and longitude of the project site.<br/>Latitude: 40.924349Longitude: -124.087581
- 2. Site Address (if relevant): N/A



- 3. Does the applicant have legal access rights, easements, or other access capabilities to the property to implement the project?
  - yes If yes, please describe below
  - no If no, please provide a concise narrative below with a schedule, to obtain necessary access
  - NA If NA, please describe below why physical access to a property is not needed

Explanation. [500 characters max.]

MCSD owns the land where the new tank will be built and there are currently two existing water storage tanks located on the property with associated water and electrical infrastructure.

4. Project Location Notes:

# C. Benefits To Disadvantaged Communities and/or Tribes

1. Does the project provide direct water-related benefits to a project area comprised of Disadvantaged Communities or Economically Distressed Communities? If partially, please estimate percentage of project that benefits disadvantaged communities and list the communities.

Entirely

] Partially; estimate the percentage of benefits provided directly to DAC:

No

List the Disadvantaged Community(s) McKinleyville

2. Does the project provide direct water-related benefits to a project area comprised of Severely Disadvantaged Communities (SDAC)? If partially, please estimate percentage of project that benefits disadvantaged communities and list the SDACs.

Entirely

Partially; estimate percentage of benefits provided directly to SDAC: 6%

No

List the Severely Disadvantaged Community(s) McKinleyville

**3.** Does the project provide direct water-related benefits to a Tribe or Tribes? If partially, please estimate percentage of project that benefits Tribe(s) and list the Tribes.

Entirely

Partially; estimate percentage of benefits provided directly to Tribe(s):

🛛 No



#### List the Tribal Community(s)

### If yes, please provide a letter of support from each Tribe listed as receiving these benefits.

4. If the project provides benefits to a DAC, EDA or Tribe, explain the water-related need of the DAC, EDA or Tribe and how the project will address the described need. [750 characters max.]

The Economically Disadvantaged and Tribal residents of McKinleyville will benefit similar to the rest of the residents of McKinleyville from the added resilience to the potable water system. The addditional storage will help ensure potable water, wastewater and fire fighting service to these residents in the event of damage to the water main from HBMWD.

5. Describe the kind of notification, outreach and collaboration that has been completed with the county(ies) and/or Tribes within the proposed project impact area, including the source and receiving watersheds, if applicable. [500 characters max.] A Cultural Resource Study was completed for CEQA/NEPA. As part of the study, letters were sent to the THPOs of the Wiyot, Bear River Band, Blue Lake Rancheria and Cher-ae Heights Indian Community of the Trinidad Rancheria to notify them of the project and request information on known cultural resources in the area. The completed Study was submitted to each of the Tribes. Separately, a letter in conformance with AB-52 was submitted to the Tribes.

## D. Project Benefits & Justification

1. For each of the Potential Benefits that the project claims, complete the following table to describe an estimate of the benefits expected to result from the proposed project. Provide quantitative benefit amounts for at least the primary and secondary benefits. Provide a qualitative narrative description of expected benefits that cannot be quantified. *See the NCRP Project Application Instructions for more information and a listing of potential benefits.* 

Benefit Description	Units	Quantitative Amount	Qualitative Description
Water Supply			
Avoided Costs-			FEMA's BCA calc.
Emergency repair	ć	12 101 261	
& service	Ŷ	13,404,301	
disruptions			

#### PROJECT BENEFITS TABLE



Benefit Description	Units	Quantitative Amount	Qualitative Description
Avoided Costs- Injury and/or property damage	\$	included in above	See notes in E.11
Enhanced firefighting capabilities- human lives protected	# lives	16,700	Project Notes below
Water Quality	1	I	
Climate Change			
Other Ecosystem Se	rvice Benefits	1	
Jobs Created or Mai	Intained		
Other Benefits	1		l
Improved water management or supply reliability- households	# households	6467	included in above
Water Supply Reliability	MG	4.5	Included in above

2. Does the proposed project provide physical benefits <u>outside</u> of the North Coast Region?



## 🗌 yes 🛛 🖂 no

If yes, describe the impacts to areas outside the North Coast Region. [500 characters max.]

- 3. List the impaired water bodies (303d listing) that the project benefits: Mad River-Sediment
- 4. Describe how the project benefits salmonids, endangered/threatened species and sensitive habitats.

HBMWD impounds water in Ruth Reservoir near the headwaters of the Mad River. They then release flows down the Mad and withdraw water from the aquifer below the Mad near Essex. The water is then delivered to MCSD and their other customers. The loss of MCSDs watermain in an emergency, would require emergency repairs, which could cause extensive impacts to the river and salmonids. The addition of the tanks helps to alleviate to an extent the urgency of the repair and allow for accomodation of consideration of the river and its habitat during the repair.

5. Have alternative methods been considered to achieve the same types and amounts of physical benefits as the proposed project?

🛛 yes

Please explain. [500 characters max.]

no

Alternatives to installing a duplicate watermain from HBMWD to MCSD have been studied and the installation of the intertie with Arcata came out of that study. A duplicate watermain has also been assessed and a grant application has been submitted to CalOES/FEMA for the installation of this waterline. It is unknown at this time whether that alternative will be funded.

#### 

Please explain. [500 characters max.]

The cost for a tank and duplicate waterline is similar, but the addition of the tank has additional benefits on a day-to-day basis. Additional storage will help ensure that sufficient firefighting water is available in an emergency. Pumping to fill storage can also occur at off-peak hours, saving costs and relieving pressure on the grid. It will also offer greater flexibility for the region, allowing HBMWD to provide water to other customers for longer periods without MCSD having to take water.

7. How will the project be monitored to determine whether it is producing the desired benefits?

MCSD has a robust maintenance program. The tank will be inspected on a weekly basis by MCSD staff and will have more detailed inspections at approximately 5-year intervals to ensure



integrity of the tank. There will be drainage installed around the perimeter of the tank which will be monitored for flow to discover any leakage. Any issues discovered will be repaired promptly.

8. Provide a narrative for project technical justification. Include any other information that supports the justification for this project, including how the project can achieve the claimed level of benefits listed below. [3,000 characters max.] Project will address the loss of water service and associated loss of wastewater & fire services for MCSD and the City of Arcata. As stated previously, the sole source of water for MCSD is a pipe buried approximately 16 ft below the bed of the Mad River that is vulnerable to earthquakes or floods. A failure of this line would result in loss of water services to MCSD for several days to a few months depending on the severity of the earthquake and the locations of the damage. The project will also benefit Arcata through enhanced water supply for the period immediately following a major earthquake event. MCSD has been working with HBMWD and Arcata to address the vulnerability of the pipeline under the Mad River and the lack of water storage in MCSD and Arcata. MCSD took advantage of the seismic retrofit of the Highway 101 bridge leading into town to install a pipeline under the bridge while it was being constructed. This pipeline was then connected to MCSD's system on the northside of the Mad River and Arcata's system on the southside of the river during a 2013 Intertie project. This intertie allows MCSD to feed water to Arcata or Arcata to feed water to MCSD if either system has a catastrophic failure in their water supply pipelines. However, as stated in the "Report for Humboldt Bay Municipal Water District, Domestic Water System Community Interties Feasibility Study", GHD, June 2012, the intertie between Arcata and MCSD can only run in one direction at a time. If MCSD is taking water from HBMWD and feeding it to Arcata, MCSD will not be able to simultaneously feed MCSD's system or fill their storage tanks. Similarly, if Arcata is feeding water to MCSD, Arcata will not be able to simultaneously fill their storage tanks. Thus, the only remaining limitation is the availability of stored water to address hydraulic capacity issues in the event that the connection to HBMWD is lost for either entity. The proposed project will provide a key remaining component of the ability for the water systems to continue to function after a large seismic event. MCSD currently has approximately two days of storage of water if the connection to HBMWD fails. Arcata has approximately 4.8 MG or approximately 2.5 days of storage to provide water to their 19,300 residents. During an earthquake event the additional storage at MCSD will provide 2.5+ days of supply for MCSD if the connection to HBMWD is lost, which can be extended indefinitely if the intertie is used and Arcata feeds water to MCSD during the night to refill storage and Arcata supplies itself during the day. Alternately, if Arcata loses its connection to HBMWD the additional storage will allow MCSD to fill water tanks at night, and then feed Arcata water during the day, while MCSD runs off the storage tanks. The additional storage will allow MCSD and Arcata to improve potable water and wastewater service to both communities during a hazard event. Kennedy Jenks is completing the design documents.



- 9. List and include any studies, plans, designs or engineering reports completed for the project as a "Technical & Reference Supporting Materials" into one document that includes a Table of Contents and is limited to approximately 50 pages. *Please see the instructions for more information about submitting these documents with the final application.*
- 10. Project Justification & Technical Basis Notes: Please provide any additional information *not included above* that you think is important.

## E. Project Tasks, Budget, And Schedule

- 1. Projected Project Start Date: 9/1/18 Anticipated Project End Date: 5/7/2024
- 2. Describe the basis for the costs used to derive the project budget in each budget category. [500 characters max.]

The costs for the design and permitting are taken from the contract scope that is already in place with Kennedy Jenks. The costs for construction were taken from the Opinion of Probable Construction Cost developed by Kennedy Jenks for their 60% design submittal.

**3.** Provide a narrative on cost considerations including alternative project costs. [500 characters max.]

There really were no cost consideration of note in the project except for the selection of the size of the tank and type of construction. The size was selected based off an SHN Engineering report that specifically looked at the storage and water use in the system, and which recommended a 4.5MG tank. The material of construction was also considered and costs for a steel versus pre-stressed concrete were compaired, and the concrete tank was the clear winner by several million dollars.

**4.** List the sources of non-state matching funds, amounts and indicate their status. Proposition 1 requires a minimum cost share of 50% of the total project costs, though a waiver may apply (see Question 6 below).

FEMA Hazard Mitigation Grant - \$7,748,857 (obtained)

MCSD Capital Improvement Reserves - From \$3,073,812 to \$5,598,084. Obtained, but only the \$3M was budgeted for.

5. List the sources and amount of State matching funds.

The FEMA HMG funds are run through CalOES but are considered Federal funds

6. Cost Share Waiver Requested (DAC or EDA)? Uss X no

Describe what percentage of the proposed project area encompasses a DAC/EDA, how the community meets the definition of a DAC/EDA, and the water-related need of the DAC/EDA



that the project addresses. In order to receive a cost share waiver, the applicant must demonstrate that the project will *directly* provide benefits that address a water-related need of a DAC/EDA.

The Project will directly benefit a DAC/EDA community; however \$10,822,669 has been secured in funding, which is already over 80% of the total estimated project cost of \$13,346,941.

- 7. Is the project budget scalable? X yes no
- 8. Describe how a scaled budget would impact the overall project, its expected benefits and state the minimum budget amount that would be viable (see Instructions E.7 for scaled budget examples). [500 characters max.]

The budgeted shortfall for the project is \$2,524,272, which is the amount requested from the NCRP. It is anticipated that the entire amount likely will not be available for funding through NCRP. The District has the balance of funding needed to fully fund the project; however, this would almost completely deplete the District's "Catastrophic Reserves", leaving the District seriously vulnerable in the event of a disaster. Any funding the NCRP can provide will help alleviate this potentiality.

#### 9. Major Tasks, Schedule and Budget for Project Solicitation

Please complete MS Excel table available at <u>https://northcoastresourcepartnership.org/ncrp-proposition-1-irwm-round-2-solicitation/</u>see instructions for the information to be included in this document and for how to submit the required excel document with the application materials.

#### 10. Project Tasks, Budget and Schedule Notes:

The detailed construction budget was taken from the Kennedy Jenks Consulting Engineers 60% design submittal, which is include with the attached Technical documents. Much of the engineering design and permitting has been completed. However, the entire design/permitting costs are included in the NCRP budget and are taken from the actual contracted costs between MCSD and Kennedy Jenks.

**11. Project Information Notes.** Please provide any information that that has not been specifically requested that you feel is important for the NCRP to know about your project.

1) Project Benefits Table - the \$13,404,361 value is the Benefit calculated with FEMA's Benefit Cost Analysis (BCA) software. It calculates the benefit of the estimated loss of services to the 16,700 MCSD customers who would be without water for the 70 days estimated to replace the damaged waterline from HBMWD. It uses a default value of \$114 per person per day for loss of water, which takes into account the loss of wastewater and fire fighting ability as well.

	Project Name: Organization Name:	4.5 MG Water Storage Tank McKinlewille Community Services District											
Task #	Major Tasks	Task Description	Major Deliverables	IRWM Task Budget	Non-State Match	Other Match (MCSD match)	Total Task Budget	25% Scaled IRWM Budget	50% Scaled IRWM Budget	60% Scaled IRWM Budget	Current Stage of Completion (%)	Start Date	Completion Date
Α	Category (a): Direct Project Admi	nistration											
1	Project Management	In cooperation with the County of Humboldt sign a sub-grantee agreement for work to be completed on this project. Develop invoices with support documentation. Provide audited financial statements and other deliverables as required	Invoices, audited financial statements and other deliverables as required	\$8,016.00	\$0.00	\$0.00	\$8,016.00	\$6,012.00	\$4,008.00	\$3,206.40	0%	3/1/23	5/7/24
2	P Reporting	Develop monthly reports describing work completed, challenges, and strategies for reaching remaining project objectives. Develop Final Report	Quarterly and Final Reports	\$8,016.00	\$0.00	\$0.00	\$8,016.00	\$6,012.00	\$4,008.00	\$3,206.40	0%	3/1/23	5/7/24
В	Category (b): Land Purchase/Ease	ment											
1	N/A			\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0%		
С	Category (c): Planning/Design/En	gineering/Environmental Documentation											
1	Final Design /Plans	Based on Kennedy Jenks Consulting Engineers (KJ) approved scope & contract amount		\$0.00	\$443,628.00	\$147,876.00	\$591,504.00	\$0.00	\$0.00	\$0.00	60%	6/3/20	1/31/23
2	Project Performance Monitoring Plan	Develop Monitoring Plan to include goals and measurable objectives	Final Monitoring Plan	\$8,240.00	\$0.00	\$0.00	\$8,240.00	\$6,180.00	\$4,120.00	\$3,296.00	0%	3/1/23	5/1/23
2	2 Environmental Documentation: CEQA	A MND was filed for this project with the State Clearinghouse and Humboldy County in Jan 2021.	Environmental Information Form approved by DWR	\$0.00	\$44,210.25	\$14,736.75	\$58,947.00	\$0.00	\$0.00	\$0.00	100%	6/3/20	2/8/22
3	Environmental Documentation: NEPA (if required)	Completed by FEMA		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0%		
Z	Permit Development Humboldt County Grading Permit/DWR notifications	Based on Kennedy Jenks Consulting Engineers (KJ) approved scope & contract amount		\$0.00	\$23,340.00	\$7,780.00	\$31,120.00	\$0.00	\$0.00	\$0.00	60%	6/3/20	6/1/23
5	Permit Development [PLEASE COMPLETE]			\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0%		
e	Non-grant Project Management	KJ Project Management based on approved contract amount		\$0.00	\$129,837.75	\$43,279.25	\$173,117.00	\$0.00	\$0.00	\$0.00	60%	6/3/20	5/7/24
7	7 Survey	To be completed by KJ, cost based on approved contract amount		\$0.00	\$17,250.00	\$5,750.00	\$23,000.00	\$0.00	\$0.00	\$0.00	100%	6/3/20	2/1/22
8	Geotechnical Investigation	To be completed by KJ, cost based on approved contract amount		\$0.00	\$7,015.50	\$2,338.50	\$9,354.00	\$0.00	\$0.00	\$0.00	100%	6/3/20	1/3/22
D	Category (d): Construction/Imple	mentation											
1	Contract Services	Included in cost below based on KJ approved contract amount	Bid Documents; Proof of Advertisement; Award of Contract; Notice to Proceed	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0%	2/1/23	4/25/23
2	Construction Administration	To be completed by KJ, cost based on approved contract amount	Construction Management Logs; Completed construction administration tasks documented in monthly progress reports; DWR Certificate of Project Completion	\$0.00	\$424,220.25	\$141,406.75	\$565,627.00	\$0.00	\$0.00	\$0.00	0%	5/9/23	5/7/24
3	Mobilization and Site Preparation	Includes site overhead and Bonds & Insurance Line Items from KJ cost estimate	Contract bonds and insurance, mobilization of equipment & materials to site	\$0.00	\$640,963.44	\$213,654.48	\$854,617.92	\$0.00	\$0.00	\$0.00	0%	5/31/23	6/20/23
2	Project Construction/Implementation: Erosion Control & Demolition	Includes Erosion Control & Demolition from KJ Cost Estimate with the Contingency costs spread out over each line item based on the % of the line item to the overall construction cost	implementation of sediment and erosion control measures including seeding and final vegitation planting	\$0.00	\$36,025.64	\$12,008.55	\$48,034.18	\$0.00	\$0.00	\$0.00	0%	5/31/23	6/20/23
u )	Project Construction/Implementation: Concrete	Includes concrete work from KJ Cost Estimate with the Contingency costs spread out over each line item based on the % of the line item to the overall construction cost	Includes placement of the concrete foundation	\$0.00	\$100,064.04	\$33,354.68	\$133,418.72	\$0.00	\$0.00	\$0.00	0%	5/31/23	6/20/23
e	Project Construction/Implementation: Metals	Includes metals from KJ Cost Estimate with the Contingency costs spread out over each line item based on the % of the line item to the overall construction cost	Includes Pipe supports and bollards	\$0.00	\$43,164.17	\$14,388.06	\$57,552.23	\$0.00	\$0.00	\$0.00	0%	5/31/23	6/20/23
7	Project Construction/Implementation: Finishes	Includes Finishes from KJ Cost Estimate with the Contingency costs spread out over each line item based on the % of the line item to the overall construction cost	Includes finishes including painting of aboveground piping	\$0.00	\$3,973.58	\$1,324.53	\$5,298.10	\$0.00	\$0.00	\$0.00	0%	5/31/23	6/20/23
8	Project Construction/Implementation: Specialties (Signage)	Includes Signage from KJ Cost Estimate with the Contingency costs spread out over each line item based on the % of the line item to the overall construction cost	Includes signage including equipment and emergency signage	\$0.00	\$1,097.67	\$365.89	\$1,463.56	\$0.00	\$0.00	\$0.00	0%	5/31/23	6/20/23
g	Project Construction/Implementation: Electrical/Instrumentation/Comms	Includes electrical and instrumentation work from KJ Cost Estimate with the Contingency costs spread out over each line item based on the % of the line item to the overall construction cost	Includes the demo of the existing MCC as well as providing the new instrumentation for pressure and level measurements as well as interfacing with SCADA	\$0.00	\$578,196.31	\$192,732.10	\$770,928.41	\$0.00	\$0.00	\$0.00	0%	5/31/23	6/20/23

	Project Name:	4.5 MG Water Storage Tank											
Task #	Major Tasks	Task Description	Major Deliverables	IRWM Task Budget	Non-State Match	Other Match (MCSD match)	Total Task Budget	25% Scaled IRWM Budget	50% Scaled IRWM Budget	60% Scaled IRWM Budget	Current Stage of Completion (%)	Start Date	Completion Date
1	Project 0 Construction/Implementation: Earthwork	Includes Earthwork from KJ Cost Estimate with the Contingency costs spread out over each line item based on the % of the line item to the overall construction cost	Includes the clearing and grubbing, grading, excavation, as well as final seeding and restoration of the site	\$0.00	\$496,070.80	\$165,356.93	\$661,427.73	\$0.00	\$0.00	\$0.00	0%	5/31/23	6/20/23
1	Project 1 Construction/Implementation: Paving & Fencing	Includes Paving & Fencing from KJ Cost Estimate with the Contingency costs spread out over each line item based on the % of the line item to the overall construction cost	Includes Asphalt Concrete paving as well as construction of concrete drainage swales and installation of site security fencing	\$0.00	\$229,658.63	\$76,552.88	\$306,211.50	\$0.00	\$0.00	\$0.00	0%	5/31/23	6/20/23
1	Project 2 Construction/Implementation: Prestressed Concrete Reservoir	Includes construction of the Prestressed Concrete Reservoir from KJ Cost Estimate with the Contingency costs spread out over each line item based on the % of the line item to the overall construction cost	Includes the construction of the prestressed concrete reservoir including all the ladders, vents, and other required appertenances	\$2,500,000.00	\$3,663,615.51	\$1,712,065.17	\$7,875,680.68	\$1,875,000.00	\$1,250,000.00	\$1,000,000.00	0%	5/31/23	6/20/23
1	Project 3 Construction/Implementation: Utilities	Includes the installation of Utilities from KJ Cost Estimate with the Contingency costs spread out over each line item based on the % of the line item to the overall construction cost	Includes the installation of all water pipelines, valves, bends, etc. as well as stormdrainage pipelines and all appertenances	\$0.00	\$680,030.54	\$226,676.85	\$906,707.39	\$0.00	\$0.00	\$0.00	0%	5/31/23	6/20/23
1	Project 4 Construction/Implementation: Equipment	Includes the Equipment line from KJ Cost Estimate with the Contingency costs spread out over each line item based on the % of the line item to the overall construction cost	Includes the installation of the tank mixing equipment to help ensure that the water in the tank does not go stale	\$0.00	\$186,494.68	\$62,164.89	\$248,659.58	\$0.00	\$0.00	\$0.00	0%	5/31/23	6/20/23
1	5 Project Signage	Included in Item 8 above		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0%	5/31/23	6/20/23
1	6 Demobilization	This task is included in the KJ scope as priced under Construction Admin and includes inspect project components and establish that work is complete. Verify that all project components have been installed and are functioning as specified will be conducted as part of construction inspection and project closeout. Conduct project completion photo monitoring. Prepare record drawings.	As-Built and Record Drawings; Project completion site photos	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0%	5/31/23	6/20/23
1	7 Project Performance Monitoring	The cost for this task is included as part of the KJ Construction Admin scope and includes performance of the project monitoring in accordance to the Monitoring Plan using the Project Close Out reports, photographs, As-builts and other closeout documentation		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0%	5/31/23	6/20/23
	Total North Coast Resource Pa	artnership IRWM Grant Request		\$2,524,272.00	\$7,748,856.75	\$3,073,812.25	\$13,346,941.00	\$1,893,204.00	\$1,262,136.00	\$1,009,708.80			
	Percentage of Total Project Cost			18.91%	58.06%	23.03%	100.00%	75.00%	50.00%	40.00%			

#### **BUDGET DETAIL**

Row (a) Direct Project Administration Costs					
Project Management Type	Personnel by Discipline	Number	Hourly	% of Cost *	Total
		of Hours	Wage		Admin
					Cost
Labor	General Manager	96	\$103		\$9 <i>,</i> 888
Labor	Finance Director	96	\$64		\$6,144
Materials					
Equipment					
Total					\$16,032
* What is the percentage based on (including total amounts	)?	n/a			
* How was the percentage of cost determined?		n/a			

#### Row (b) Land Purchase/Easement

Row (c) Planning/Design/Engineering & Environmental Documentation						
Personnel (Discipline)	Major Task Name	Number	Hourly	Total Cost		
		of Hours	Wage			
All costs in this protion of the Table are based on the						
approved contract budget with Kennedy Jenks Consulting						
Engineers, except of the Monitoring Plan costs detailed below						
General Manager	Project Performance Monitoring Plan	80	103	\$8,240		
Total				\$8,240		

Row (d) Construction/Implementation					
Personnel (Discipline)	Work Task and Sub-Task	(from	Number	Hourly	Total Cost
	Work Task Table)		of Hours	Wage	
Detailed Cost Estimate provided by KJ in their 60%					
submittal, please see attached Technical Information for					
details					
Materials and Equipment	Work Task and Sub-Task	(from	Number	Unit Cost	
	Work Task Table)		of Units		
Total					



## **ORGANIZATION INFORMATION**

# Project Name: 4.5 Million Gallon Water Storage Tank Construction

2. Applicant Organization Name: McKinleyville Community Services District

### 3. Contact Name/Title

Name: Patrick Kaspari Title: General Manager Email: pkaspari@mckinleyvillecsd.com Phone Number (include area code): 707-839-3251

## 4. Organization Address (City, County, State, Zip Code):

1656 Sutter Road, McKinleyville, Humboldt County, CA 95519

## 5. Organization Type

- Public agency
  - 501(c)(3) Non-profit organization
- Public utility
- Federally recognized Indian Tribe
- California State Indian Tribe listed on the Native American Heritage Commission's
- California Tribal Consultation List
- Mutual water company
- Other:

## 6. Authorized Representative (if different from the contact's name)

- Name:
- Title:
- Email:

Phone Number (include area code):

7. List all projects the organization is submitting to the NCRP for this Solicitation in order of priority.

4.5MG Water Storage Tank Construction

8. Organization Information Notes:



## **ELIGIBILITY**

#### 1. North Coast Resource Partnership Goals and Objectives

#### GOAL 1: INTRAREGIONAL COOPERATION & ADAPTIVE MANAGEMENT

Objective 1 - Respect local autonomy and local knowledge in Plan and project development and implementation

Objective 2 - Provide an ongoing framework for inclusive, efficient intraregional cooperation and effective, accountable NCRP project implementation

Objective 3 - Integrate Traditional Ecological Knowledge in collaboration with Tribes to incorporate these practices into North Coast Projects and Plans

#### GOAL 2: ECONOMIC VITALITY

Objective 4 - Ensure that economically disadvantaged communities are supported and that project implementation enhances the economic vitality of disadvantaged communities by improving built and natural infrastructure systems and promoting adequate housing

Objective 5 - Conserve and improve the economic benefits of North Coast Region working landscapes and natural areas

#### GOAL 3: ECOSYSTEM CONSERVATION AND ENHANCEMENT

Objective 6 – Conserve, enhance, and restore watersheds and aquatic ecosystems, including functions, habitats, and elements that support biological diversity
 Objective 7 - Enhance salmonid populations by conserving, enhancing, and restoring required habitats and watershed processes

#### GOAL 4: BENEFICIAL USES OF WATER

Objective 8 - Ensure water supply reliability and quality for municipal, domestic, agricultural, Tribal, and recreational uses while minimizing impacts to sensitive resources
 Objective 9 - Improve drinking water quality and water related infrastructure to protect public health, with a focus on economically disadvantaged communities
 Objective 10 - Protect groundwater resources from over-drafting and contamination

#### GOAL 5: CLIMATE ADAPTATION & ENERGY INDEPENDENCE

Objective 11 - Address climate change effects, impacts, vulnerabilities, including droughts, fires, floods, and sea level rise. Develop adaptation strategies for local and regional sectors to improve air and water quality and promote public health Objective 12 - Promote local energy independence, water/ energy use efficiency, GHG emission reduction, and jobs creation

#### GOAL 6: PUBLIC SAFETY

Objective 13 - Improve flood protection, forest and community resiliency to reduce the public safety impacts associated with floods and wildfires



### 2. Does the project have a minimum 15-year useful life?

- a) 🛛 yes 🗌 no
- b) If yes, will the organization be able to provide compliance documentation outlined in the instructions should the project be selected as a Priority Project?
   in yes in no

### 3. Other Eligibility Requirements and Documentation

#### CALIFORNIA GROUNDWATER MANAGEMENT SUSTAINABILITY COMPLIANCE

a) Does the project directly affect groundwater levels or quality?

	-		
yes		$\boxtimes$	no

 b) If yes, will the organization be able to provide compliance documentation outlined in the instructions including a Groundwater Sustainability Agency letter of support, to include in the NCRP Regional Project Application should the project be selected as a Priority Project?

у	es		no
---	----	--	----

#### CASGEM COMPLIANCE

- a) Does the project overlie a medium or high groundwater basin as prioritized by DWR?
- b) If yes, list the groundwater basin and CASGEM priority:
- c) If yes, please specify the name of the organization that is the designated monitoring entity:
- d) If yes, please specify whether the local Groundwater Sustainability Agency has endorsed the project:

#### URBAN WATER MANAGEMENT PLAN

- a) Is the organization required to file an Urban Water Management Plan (UWMP)?
- b) If yes, has DWR verified the current 2020 UWMP?
- c) If the 2020 UWMP has not been verified by DWR, explain and provide anticipated date for verification:
- d) Has DWR verified a water loss audit report in accordance with SB 555 as submitted by the urban water supplier?

🔀 yes		no
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- e) Does the urban water supplier meet the water meter requirements of CWC 525?
- f) Does the urban water supplier meet the State Water Resources Control Board's Water Conservation and Production Reporting requirement?

🛛 yes 🛛		no
---------	--	----



g) If yes, will the organization be able to provide compliance documentation outlined in the instructions, to include in the NCRP Regional Project Application should the project be selected as a Priority Project?

#### AGRICULTURAL WATER MANAGEMENT PLAN

a) Is the organization – or any organization that will receive funding from the project – required to file an Agricultural Water Management Plan (AWMP)?

yes	🔀 no
-----	------

b) If yes, will the organization be able to provide compliance documentation outlined in the instructions, to include in the NCRP Regional Project Application should the project be selected as a Priority Project?

yes	
-----	--

no

#### SURFACE WATER DIVERSION REPORTS

a) Is the organization required to file State Water Resources Control Board (SWRCB) annual surface water diversion reports per the requirements in CWC Part 5.1?

🗌 yes	🔀 no
-------	------

b) If yes, will the organization be able to provide compliance documentation outlined in the instructions, to include in the NCRP Regional Project Application should the project be selected as a Priority Project?

yes		no
-----	--	----

#### STORM WATER MANAGEMENT PLAN

- a) Is the project a stormwater and/or dry weather runoff capture project?
- b) If yes, does the project benefit a Disadvantaged Community with a population of 20,000 or less?

	yes			no
--	-----	--	--	----

- c) If this is a stormwater/dry weather runoff project but does not benefit a small DAC population, please provide documentation that the project has been included in a Stormwater Resource Plan that has been incorporated into the NCRP IRWM Plan:
- d) If no, will the organization be able to provide documentation that the project is included in a Stormwater Resource Plan that has been incorporated into the NCRP IRWM Plan, should the project be selected as a Priority Project?

	yes			no
--	-----	--	--	----



#### 4. Eligible Project Type under 2022 IRWM Grant Solicitation

$\square$	Water reuse and recycling for non-potable reuse and direct and indirect potable
	reuse
	Water-use efficiency and water conservation
	Local and regional surface and underground water storage, including
	groundwater aquifer cleanup or recharge projects
$\boxtimes$	Regional water conveyance facilities that improve integration of separate water systems
$\boxtimes$	Watershed protection, restoration, and management projects, including projects that reduce the risk of wildfire or improve water supply reliability
	Stormwater resource management projects to reduce, manage, treat, or capture rainwater or stormwater
	Stormwater resource management projects that provide multiple benefits such as water quality, water supply, flood control, or open space
	Decision support tools that evaluate the benefits and costs of multi-benefit stormwater projects
	Stormwater resource management projects to implement a stormwater resource plan
	Conjunctive use of surface and groundwater storage facilities
	Decision support tools to model regional water management strategies to account for climate change and other changes in regional demand and supply projections
$\square$	Improvement of water quality, including drinking water treatment and
	distribution, groundwater and aquifer remediation, matching water quality to
	water use, wastewater treatment, water pollution prevention, and management
	of urban and agricultural runoff
	Regional projects or programs as defined by the IRWM Planning Act (Water Code §10537)
	Other:

- 5. Describe how the project provides a benefit that meets at least one of the Statewide Priorities as defined in DWR's <u>Final 2022 Guidelines</u> (see page 7) and Tribal priorities as defined by the NCRP?
- 2.Encourages regional approaches amoung water users sharing watersheds-The project will help ensure water security at the local level. The additional tank will provide a key component to help ensure that the water intertie between MCSD, the City of Arcata and HBMWD will function as desired.
- 5. Strengthen partnerships with local, federal, and Tribal governments, water agencies and irrigation districts, and other stakeholder.- This project benefits MCSD, HBMWD, Arcata and CalOES/FEMA



## CERTIFICATION OF AUTHORITY

By signing below, the Authorized Representative executing the certificate on behalf of the Project Sponsor affirmatively represents that s/he has the requisite legal authority to do so on behalf of the Project Sponsor. The Authorized Representative executing this proposal on behalf of the project sponsor understands that the NCRP is relying on this representation in receiving and considering this proposal. The person signing below hereby acknowledges that s/he has read the entire NCRP 2022 Project Review and Selection Process Guidelines and the NCRP 2022 Proposition 1 IRWM Round 2 Project Application & Instructions documents and has complied with all requirements listed therein.

Official Authorized to Sign for Proposal

Signature

Parick Kaspari

Date 11/3/2022

#### TECHNICAL AND SUPPORTING DOCUMENTS

FOR

McKinleyville Community Services District, 4.5MG Water Storage Tank Project

- 1. Attachment A MCSD Disadvantages and Severely Disadvantaged Communities Map (1 page)
- 2. Attachment B Kennedy Jenks Contract Scope & Opinion of Probable Construction Cost, 60% Design (6 pages)
- 3. Attachment C Kennedy Jenks Project Schedule, 60% Design (1 page)
- 4. Attachment D A portion of Kennedy Jenks Design Plans, 60% Design (33 pages)

# **Attachment A**

# MCSD Disadvantages and Severely Disadvantaged Communities Map





McKinleyville Community Services District <sup>Map Creater</sup> 10-2022 Disadvantaged and Severely Disadvantaged Communities **Attachment B** 

# Kennedy Jenks Contract Scope & Opinion of Probable Construction Cost, 60% Design

#### Exhibit B Compensation

Task	Original	Amend. 1	Amend. 2	Revised Fee
Phase One - Preliminary Analysis and Investigations	Contract Fee			
1 1 Project Management	\$39.840		(\$5,688)	\$3/1 153
1.2 Phase One Grant Administration	\$35,040 \$7,615		(\$2,000)	¢2 616
1.2 Province Grant Automistration	\$7,013		(33,999)	\$3,010
1.3 Preliminary Surveying	\$20,000		\$3,000	\$23,000
1.4 Preliminary Engineeing	\$217,150		(\$61,246)	\$155,904
1.5 NEPA/CEQA Special Studies	\$55,540	\$12,180	(\$8,773)	\$58,947
1.6 Preliminary Geotechnical Investigation	\$0	\$8,040	\$214	\$8,254
APC Charge	\$7,920	\$132	(\$2,484)	\$5 <i>,</i> 568
Contingency Reserve	\$11,825		(\$11,825)	\$0
Phase One - Subtotals	\$359,890	\$20,352	(\$90,800)	\$289,442
Phase Two - Final Analysis, Design and Construction				
2.1 Project Management	\$93,930		\$5,688	\$99,618
2.2 Phase Two Grant Administration	\$26,163		\$3 <i>,</i> 999	\$30,162
2.3 Final Geotechnical Investigation	\$8,040	(\$8,040)	\$1,100	\$1,100
2.4 Final Engineering Design	\$277,580		\$158,020	\$435,600
2.5 Permitting	\$12,280		\$18,840	\$31,120
2.6 Construction Management	\$504,340			\$504,340
APC Charge	\$18,909	(\$96)	\$2,484	\$21,297
Contingency Reserve	\$28,165		\$11,825	\$39,990
Phase Two - Subtotals	\$969,407	(\$8,136)	\$201,955	\$1,163,226
Totals	\$1,329,297	\$12,216	\$111,155	\$1,452,668

#### **OPINION OF PROBABLE CONSTRUCTION COST**

#### **KENNEDY/JENKS CONSULTANTS**

Client:	McKinelyville Community Services District
Project:	4.5 MG Reservoir
Location:	McKinnelyville , CA

Prepared By: JLH Date Prepared: 8-Aug-22

16

K/J Proj. No.: 2076050\*00 ENR CCI: 13,168

Estimate Type: 60% Design

#### Months to Construction Midpoint:

	SUMMARY BY DIVISION				
511/ N				SUB-	
DIV. No.	ITEM DESCRIPTION	MATERIALS	INSTALLATION	CONTRACTOR	TOTAL
2	Erosion Control and Demolition	2,330	30,490		32,820
3	Concrete	65,454	25,706		91,160
5	Metals	15,733	23,590		39,323
9	Finishes			3,620	3,620
10	Specialties (Signage)	500	500		1,000
26-28	Electrical /Instrumentation/ Communications	148,835		377,912	526,747
31	Earthwork	203,223	179,496	69,210	451,929
32	Exterior Improvements (Paving & Fencing)	72,604	43,092	93,527	209,223
33A	Prestressed Concrete Reservoir			5,381,165	5,381,165
33B	Utilities	469,405	150,115		619,520
41	Equipment	129,000	25,900	15,000	169,900
	Subtotal Direct Cost	1,107,084	478,890	5,940,434	7,526,408
	Sales Tax on Materials 7.75%	85,799			85,799
	Site Overhead/ General Conditions @ 8%				602,113
	Design/Estimating Contingency @ 10%				752,641
	Escalate to Midpt of Const. @ annual value of 6.5%				652,289
	Subtotals				9,619,249
	Market Conditions Adjustment Contingency 5.0%				480,962
	Subtotals				10,100,211
	Bonds & Insurance 2.5%				252,505
	Contractors Fee @ 15%				1,515,032
	Subtotals				11,867,748
	Estimated Bid Price				11,867,748
	Total Estimate				11,870,000

\*Does not include utility service connection fees

Estimate Accuracy +15% -5% +15%

Estimated Range of Probable Cost								
+15% Total Est5%								
\$13,650,500	\$11,870,000	\$11,276,500						

#### **OPINION OF PROBABLE CONSTRUCTION COST**

Client: McKinelyville Community Services District

Project: 4.5 MG Reservoir

Location: McKinnelyville , CA

#### Estimate Type: 60% Design

							Mate	erials	Installation			Installation Equipm		oment	Sub-contractor		
Area / Bldg	CSI Spec. Division			Description	Qty	Units	\$/Unit	Total	MH/ <u>Unit</u>	Labor MHRS Rate	\$/Unit	Total	\$/Unit	Total	\$/Unit	Total	Total
	2			TESC (Silt Fence)	760	LF	2.00	1.520			2.00	1.520					3.040
	2			Construction Entrance	1	IS					3.000.00	3.000					3.000
	2			Straw Wattles	810	I F	1 00	810			1.00	810					1.620
	2			Sawcut Existing Pavement	20	LF	1.00				3.00	60					60
	2			Remove / Dispose Paving	160	SY					15.00	2 400					2 400
	2			Demo Fensing	100	15					5.00	2,400					2,400
	2			R/R Existing Fencing for Construction	440						1 500 00	1,500					2,200
	2				400	LO					20.00	8,000					8,000
	2				400						500.00	500					500
	2			Demo Existing Precast Vault	1	ΕΔ					1 500.00	1 500					1 500
	2			Demo Existing Wood Frame, Shelter	1	FΔ					2 000 00	2 000					2 000
	2			Demo Existing Propane Tank/ Pad/Bollards/ Pining	1	FA					3,000,00	3,000					3 000
-	2			Temporary Propane Tank/ Piping	1	FA					4 000 00	4 000					4 000
	2 Total				· ·			2 330			1,000100	30 490					32 820
	3		SDMH1	4" x 8 ' Deen MH	1	FΔ	5 075 00	5.075			3 060 00	3 060					8 135
	3		ODIMITT	MH Denetrations/ Seel	6		75.00	5,075			450.00	0,000					0,100
	3				0	EA	75.00	4 000			150.00	900	200.00	<u> </u>			900
	3		CBI&Z	Calch Basins 3X3X3 W/ graled lop		EA	2,000.00	4,000			1,500.00	3,000	300.00	600			7,600
	3				1		39,576.60	39,577			3,917.70	3,918	2,127.00	2,127			45,621
	3			Valve Vault (Interne valves) w/ hatch	1	EA	9,142.35	9,142			2,000.00	2,000	500.00	500			11,042 5.000
	2		UF		1	EA	2,500.00	2,500			2,500.00	2,500					5,000
	3			Constants State Constant Devide	50	05	C 00	200			0.00	450					750
	3			Concrete Slab - Control Panels	50	SF	6.00	300			9.00	450					/50
	3			Concrete Slab - Transformer	100	SF	6.00	600			9.00	900					1,500
	3			Concrete Slab - Em. Generator	12	SF	0.00	432			9.00	5 404					1,080
	ۍ ۲. ۲. ۲. ۵			Concrete Pads for Pipe Supports in Sensitive Area	13	Cr	300.00	3,828			400.00	5,104		2.007			8,931
	3 I otal		80	Dina Sunnarta in Sanaitiva Area, Stran	17		250.00	00,404			472.50	22,479		3,221			91,160
	5		50	Pipe Supports in Sensitive Area- Strap	17	EA	250.00	4,333			172.50	2,990					7,323
	5		00	Pipe Supports in Vault	3		400.00	1,200			200.00	600					1,800
	5		SD	Removable Bollards	12	EA	800.00	9,600			1,250.00	15,000					24,600
	5		SD	Install Salvaged Bollards	4	EA	150.00	600			1,250.00	5,000					5,600
	5 10tai				4	10		15,733				23,590			500	500	39,323
	9			Exposed Pipe Coalings Vauli	260	LS									500	500	500
	9 O Totol			Exposed Fipe Coallings (Sensitive Area Above grade Fipe)	200	LF									12	3,120	3,120
	9 TOLAI			Identification / Signage	1	10	500.00	500			E00.00	500				3,020	3,620
						LO	500.00	500			500.00	500					1,000
	10 10tai				-			500				500					1,000
	20			Cochran Site : Electrical, including conduit/ Wire & following:													
	20			Cochian Site : Electrical including conduit whe & following.													
	20			Demo MCC	1	F۵									5.000	5 000	5 000
	20			Demo Propage Generator	1	ΕΔ									5,000	5,000	5,000
	20			Demo Portable Gen Recentacle	1	ΕΔ									1,500	1 500	1 500
	26			DemoTelephone Board	1	FA									500	500	500
	26			Demo Meter	1	FΔ									1 000	1 000	1 000
	26			Demo Charger	1	FΔ									500	500	500
-	26			Demo Telephone Board	1	FA									500	500	500
	26			Disconnect Existing Booster Pumps	3	FΔ									1 000	3,000	3 000
	26	+ +		New MCC	1	FA	89.000.00	89 000							22 250	22,250	111 250
	26	+ +		Wall Mounted MTS 200 amp 4 Pole / 3 Position	1	FA	9 500 00	9 500							2 375	2.375	11 875
	26	+ +		Generator Receptacle	1	FA	1 000 00	1 000							1 000	1.000	2 000
	26			Remote PGE Meter	1	FA	1,000.00	1,000							2 000	2.000	2,000
	26	+ +		Standby Generator 80Kw w/ Subbase Tank & Enclosure w/ Marine Coating	1	FA	46 690 00	46 690							7,500	7,500	54 190
	20	+ +		ATS	1	FA	2.645.00	2 645							2 000	2.000	4 645
	26			Rewire Existing Booster Pumps	3	FA	2,0.0.00	2,040							3 000	9.000	9,000
	26	+ +		Trenching for Electrical	1	1.5									5,000	5,000	5,000
	26		XFMR-C1	Transformer 45kVW 480, 280/120	1	FA									5 000	5.000	5,000
		1				· - · ·				I I					0,000	-,	0,000

#### KENNEDY/JENKS CONSULTANTS

JLH
8-Aug-22
2076050*00

						Mate	erials	Installation		llation	Equipment		oment	Sub-contractor			
Area / Bldg	CSI Spec. Division		Description	Qty	Units	\$/Unit	Total	MH/ <u>Unit</u>	MHRS	Labor Rate	\$/Unit	Total	\$/Unit	Total	\$/Unit	Total	Total
	26	LP-C1	Panelboard	1	EA										7,500	7,500	7,500
	26	LTG-CP	Lighting Control Panel	1	EA										5,000	5,000	5,000
	26	 LCP	Mixer Control Panels (Installation)	3	EA										5,000	15,000	15,000
	26	LCP-001CA	Siesmic Valve Control Panel (Installation)	1	EA										10,000	10,000	10,000
	26	 A	Lights - int	4	EA										800	3,200	3,200
	26		Lights - Ext	4	EA										008	3,200	3,200
	20	N	Sile Light Poles	2 1	EA										3,000	5,000	6,000
	20		Power to Mixers (Existing Tanks)	2	ES FA										7,000	15,000	15 000
	26		Power to Mixers (Dew Tank) 1.5HP	1	EA										10.000	10,000	10,000
	26		Power to New Siesmic Valve	1	EA										7,500	7,500	7,500
	26		Instrumentation/ Controls														
	26	LIT	Level Transmitter	1	EA										7,000	7,000	7,000
	26	LSHH	Level Floats	1	EA										3,000	3,000	3,000
	26	ZS	Position Switches (Tank Hatches -2 / Ladder)	3	EA										3,000	9,000	9,000
	26	 ZS	Position Switches (Altitude Valve)	1	EA										3,000	3,000	3,000
	20		Relocated Existing Control Panel - New Enclosure	1	LS										10,000	10,000	10,000
	20		Relocated Existing Flow Monitor	1	LS										2,300	2,500	2,500
	26		Existing Control Panel modifications	1	LS										20.000	20.000	20.000
	26														20,000		
	26		Security :														
	26		Camera System	1	LS										3,000	3,000	3,000
			Cameras	3	EA										2,000	6,000	6,000
	26		Communications:														
	26		Telemetry (Use existing)	4	10										10.000		
	26		Startup/ Programming Support	1	LS										10,000	10,000	10,000
	26		Norton Site Electrical including conduit/ Wire & following:														
	26		Panelboard 125A/ 24 C	1	EA										10.000	10.000	10.000
	26		Power to Mixers (Existing Tanks)	2	EA										10,000	20,000	20,000
	26	LCP	Mixer Control Panels (Installation)	2	EA										3,000	6,000	6,000
	26		Demo Existing Load center Panelboard	1	EA										2,500	2,500	2,500
	26		Reconnect Existing Circuits	6	EA										1,200	7,200	7,200
	26		Electrical Sub OH&P	22%											431,760	94,987	94,987
	26 Total		Clear & Crub Evisting Site Vegetation	1	18		148,835				E 000 00	E 000				377,912	526,747
	31		Site Cut	1 / 183	BCV						3,000.00	5,000					5,000
-	31		Site Fill	1.704	LCY						10.00	17.043					17.043
	31		Site Export Load Extra Excavated Material	4,124	LCY						0.53	2,165					2,165
	31		Stockpile on Site Excess Excavated Materials	4,124	LCY						5.00	20,618					20,618
	31		Subgrade Prep - Tank - 5' Select Fill , Compacted	4,790	CY	25.00	119,742				8.00	38,317					158,059
	31		Subgrade Prep - Tank - 6" 3/4" Crushed Rock , Compacted	2,042	SY	4.72	9,637				0.85	1,737	0.75	1,531			12,905
	31		30 mil Liner under tank and drain trench	28 339	SF	42.00	37.974				0.88	24 938	0.23	6.518			9,032 69,429
-	31		6 mil Polvethene Liner under tank and around drain rock	3.847	SY	2.70	10.386	-			0.99	3.791	0.20	0,010			14.176
	31		6" Perf Drain Pipe with filter fabric	515	LF	6.02	3,100				15.50	7,981	1.11	572			11,653
	31	UD	6" PVC Cap	2	EA	7.91	16				17.10	34					50
	31		Tank Backfill - Drain Rock	241	LCY	42.36	10,192				9.23	2,222	1.28	308			12,722
	31		Excavation Conc Equipment Pads	16	CY						15.00	247					247
	31		Excavation Conc Pipe Supports in Sensitive Area	35	CY						15.00	519 2,400					2 400
	31		Backfill Valve Vault	∠ 212	CY						10.00	2,122					2,400
	31		Pea Gravel 12" (under structures)	13	CY	30.00	400				10.00	133					533
	31		Rip Rock Lining (1/2 TON)	144	SY	25.00	3,611				67.50	9,750	10.63	1,535			14,897
	31		Rip Rap -Fabric	144	SY	2.00	289				2.00	289					578
	31		Repair Existing Earthen Swale	70.4	LF						3.00	E 400					
	31		Excavation Concrete Swale-Perimeter of Site	/84							7.00	5,488					5,488
	31 31		Excavation Concrete Swate- Cochran Road Site Fine Grading	1 903	SY						3.00	5 708					5 702
	31		Hydroseeding (slopes and trenched easement area)	6.156	SY						0.00	0,700			2	9.235	9.235
	31		Vegetation Restoration/ Mitigation	1	LS										50,000	50,000	50,000
	31	 	Stormwater Pond Landscaping	1	LS										9,975	9,975	9,975
	31 Total						203,223					168,794		10,702		69,210	451,929

							Mat	erials	Installation			Equipment		Sub-contractor				
	CSI Spec.								MH/		Labor							
Area / Bldg	Division			Description	Qty	Units	\$/Unit	Total	<u>Unit</u>	MHRS	Rate	\$/Unit	Total	\$/Unit	Total	\$/Unit	Total	Total
	32			Site Paving :														
	32			AC Base - 6"	1,707	SY	9.79	16,713				1.22	2,074	0.82	1,400			20,187
	32			AC Paving 3"	1,707	SY										19	32,777	32,777
				Conc Curb/ Gutter 2' Wide	653	LF	35.96	23,469				10.78	7,035					30,504
	32			Anchored Concrete Swale 3' Wide - perimeter	2,352	SF	10.00	23,520				10.00	23,520					47,040
	32			Anchored Concrete Swale- Anchors - perimeter	1	CY	300.00	242				500.00	403					644
	32				531	SF	10.00	5,310				10.00	5,310					10,620
	32	-		Site improvements: Retaining Wall approx 4' avg includes feeting	50		67.00	2 250				67.00	2 250					6 700
	32				50	LF	07.00	3,350				07.00	3,350					0,700
	32			Site Security														
	32			8' High Chainlink Fence w/ Barb Wire 2 1/2" Line Post	810	LF										75	60.750	60,750
	32																	
	32 Total							72,604					41,692		1,400		93,527	209,223
				Reservoir:														
	13			Concrete Tank 4.5 MG	1	LS										4,975,000	4,975,000	4,975,000
	13			Standard Tank Appurtenances (Roof Sleeves, Aluminum Handrail, FRP Interior Lado	1	LS										170,000	170,000	170,000
	13			Owner Requested Tank Appurtenances	1	LS										25,000	25,000	25,000
	7			Sheet Membrane Waterproofing Exterior Tank (Below Grade)	8,651	SF										6.50	56,230	56,230
	13			Hot Mop Roof/ Gravel	15,829	SF										5.05	79,935	79,935
	11			Reservoir Testing /Disinfection	1	LS										75,000	75,000	75,000
	33A Total																5,381,165	5,381,165
	15			Buried Piping:														
	15			Inlet:														
	15			I renching 3' Wide x 6' Deep	150		10.00	4 500				20.00	3,000					3,000
	15		14/	Beading	150		10.00	1,500				6.00	900	0.54				2,400
	15		VV	18" DI Pipe CI 153	150		230.16	34,524				43.54	6,531	2.54				41,055
	15		VV	18" Tee	1	EA	7,518.90	7,519				648.00	648	37.99				8,167
	15		VV	18" 90	4	EA	2 500 00	2 500				450.00	450	20.00				2.050
	15		VV	18° 45	1	EA	3,500.00	3,500				459.00	459	30.00				3,959
	15		VV	18" Flex Cpig	1	EA	21,331.00	21,331	10.00		445	594.16	594	60.00				21,925
	15		VV	18" FLG isolation Butterfly Valve w/ EXT OP (full tank height) (in Tank) SST	1	EA	30,000.00	30,000	16.66		115	1,915.90	1,916	300.00				31,916
	15		VV	18" FLG Isolation Butterfly Valve w/ Ext Op Nut & Valve Box	1	EA	9,500.00	9,500	9.83		115	1,130.45	1,130	100.00				10,630
	15		VV		1	EA	2,500.00	2,500	5.00		115	575.00	5/5	100.00				3,075
	15			Poly Bagging	150		4.33	650				500.00	4.000					000
	15			Encasement under Fank	2		500.00	1,000				300.00	1,000	48.00	00			2,000
	15			Infusi Block		EA	337.47	6/0				247.05	494	48.00	90			1,200
	15			Common overflow:	150	LF						5.00	/ 50					750
	15			Trenching 3' Wide x 6' Deen	320	IF						20.00	6.400					6.400
	15			Bedding	320		10.00	3 200				6.00	1 920					5 120
	15			Check Dams	6	FA	500.00	3 000				500.00	3 000					6 000
	15		SD	18" PVC SDR26	0	LF	79 70	0,000				14.89	0,000	0.88		-		0,000
	15		OF	18" Overflow/Drain DI	320	LF	230.16	73.651				43.54	13.932	2.54	813			88.396
	15		0.	Poly Bagging	320	LF	4 33	1.386						2.01		-		1,386
	15		OF	18" Bend DI 45	3	EA	3 500 00	10,500				459.00	1.377	30.00				11.877
	15		OF	18" Bend DI 22.5	2	EA	3.150.00	6.300				459.00	918	30.00				7.218
	15		OF	18" Bend DI 11.25	2	EA	3.150.00	6,300				459.00	918	30.00				7.218
	15		OF	18" Clean Out	1	EA	8.000.00	8,000				1.000.00	1.000	75.00	75			9.075
	15		OF	18" Welded Steel pipe .25" wall - Fusion Epoxy Lined/ Epoxy Coated	260	LF	218.99	56,938				236.20	61.411	5.15	1.338			119.687
	15			Tank 1C Overflow: (Buried)											,			
	15	1		Trenching 3' Wide x 5' Deep	130	LF						18.00	2,340					2,340
	15	İ		Bedding	130	LF	7.00	910				5.00	650					1,560
	15		SD	12" PVC SDR 26	130	LF	32.54	4,231				9.30	1,209	0.55	72			5,512
	15		SD	12" PVC Bend	2	EA	300.76	602				190.35	381					982
	15	1	SD	12" Clean Out	1	EA	1,500.00	1,500				800.00	800					2,300
	15			Warning/Locate Tape	450	LF	1.00	450				1.00	450					900
	15			(E) Tanks Overflow:														
	15			Trenching3' Wide x 5' Deep	120	LF						18.00	2,160					2,160
	15			Bedding	120	LF	7.00	840				5.00	600					1,440
	15		SD	12" PVC SDR 26	120	LF	32.54	3,905				9.30	1,116	0.55	66			5,088
	15		SD	12" PVC Bend	1	EA	300.76	301				190.35	190					491

						Mat	erials	Installation				Equipment		Sub-contractor			
Area / Bldg	CSI Spec. Division		Description	Qty	Units	\$/Unit	Total	MH/ Unit MF	IRS	Labor Rate	\$/Unit	Total	\$/Unit	Total	\$/Unit	Total	Total
	15	SD	Cut / Connect to Existing ACP with Fernoo (at Joint)	1	EA	1 000 00	1.000				500.00	500					1.500
	15	02	Warning/Locate Tape	120	LF	1.00	120				1.00	120					240
	15		Tank Drain:														
	15		Trenching 2' Wide x 5' Deep	130	LF						12.00	1.560					1,560
	15		Bedding	124	LF	4.00	496				2.40	298					794
	15	D	8" DI	130	LF	137.67	17,897				22.38	2,910	1.32	172			20,978
	15	D	8" DI 45	1	EA	691.88	692				279.45	279	16.46	16			988
	15	D	8" Flex Cplg	1	EA	7,200.00	7,200				297.00	297					7,497
	15	D	8" DI 90 Under Tank	1	EA	770.00	770				279.45	279	16.46	16			1,066
	15		Poly Bagging	130	LF	2.74	356										356
	15	D	8" Mud Valve (in Tank)	1	EA	17,291.64	17,292	16.00		115	1,840.00	1,840					19,132
	15		Encasement under Tank	1	CY	500.00	444				500.00	444					889
	15		Thrust Block	1	EA	86.13	86				52.65	53	10.18	10			149
	15		Warning/Locate Tape	125	LF	1.00	125				1.00	125					250
	15		Tank Sub Drain														
	15		Trenching 2' Wide x 5' Deep	240	LF						12.00	2,880					2,880
	15		Bedding	240	LF	4.00	960				2.40	576					1,536
	15	SD	6" PVC Pipe SDR 26	240	LF	8.19	1,965				7.05	1,691					3,656
	15	SD	6" PVC Pipe 90	2	EA	61.42	123				59.25	119					241
	15	SD	6" PVC Pipe 45	1	EA	61.42	61				59.25	59					121
	15	SD	6" PVC Pipe 22.5	1	EA	61.42	61				59.25	59					121
	15		Vault Piping:														
	15	BYPASS	8" Flg X Flg Spools	3	EA	500.00	1,500	4.00		115	460.00	1,380					2,880
	15	BYPASS	12" X 8" TEE	2	EA	1,800.00	3,600	8.20		115	943.00	1,886					5,486
	15	BYPASS	8" 90 BEND Flg	2	EA	800.00	1,600	3.37		115	387.55	775					2,375
	15	W	12" Pipe Spools Short	2	EA	900.00	1,800	6.00		115	690.00	1,380					3,180
	15	W	12" X 18" Reducer	2	EA	2,800.00	5,600	8.31		115	955.65	1,911					7,511
	15	W	12" Expansion Joint	1	EA	800.00	800			115							800
	15	W	12" FCA	1	EA	1,200.00	1,200	3.09		115	355.35	355					1,555
	15	W	18" Flex Cplg	1	1	1.500.00	1,500	4.51		115	518.65	519					2.019
	15	W	18" FLG Seismic Valve	1	EA	65.550.00	65,550	16.00		115	1.840.00	1.840	200.00	200			67,590
	15	W	12" FLG Altitude Valve	1	EA	27.000.00	27,000	6.00		115	690.00	690	50.00	50			27,740
	15	BYPASS	8" FLG Bypass Butterfly Valve	1	EA	1.550.00	1,550	2.84		115	326.60	327	50.00	50			1,927
	15		Tank 1C Overflow: (Exposed)			,	,										
	15	SD	12" Steel Pipe	25	LF	150.00	3.750			115	8.32	208	0.57	14			3.972
	15	SD	12" 90	2	EA	720.00	1,440			115	855.63	1,711	26.00	52			3,203
	15	SD	12" Tideflex Check Valve Flgd	1	EA	7,500.00	7,500			115	500.00	500					8,000
	15					,	,										
	15		Drain Piping (Vaults) :														
	15		3"Floor Drain Brass Trap Guard	1	EA	250.00	250	2.03	2.0	115	233.45	233					483
	15		3" PVC Pipe	20	LF	12.75	255	0.10	2.0	115	11.50	230					485
	15		3" PVC 90	2	EA	25.00	50	0.77	0.2	115	88.55	177					227
	15		3" PVC Union	1	EA	100.00	100	0.80	0.2	115	92.00	92					192
	33B Total						469,405					147,074		3,041			619,520
	11		Tank Mixers including Control Panel with VFD	5	EA	25,800.00	129,000	32.00 16	60.0	115	3,680.00	18,400	1,500.00	7,500	3,000	15,000	169,900
	11 Total						129,000					18,400		7,500		15,000	169,900

# **Attachment C**

# Kennedy Jenks Project Schedule, 60% Design

## McKinleyville Community Services District 4.5MG Water Reservoir Project Schedule [Wed 4/13/22]

ID	Task Name	Duration	Start	Finish	Predecessors
1	Phase Two - Final Design and Construction	546 days	Fri 4/1/22	Fri 5/3/24	
2	Notice to Proceed	0 days	Fri 4/1/22	Fri 4/1/22	
3	2.1 - Project Management	546 days	Fri 4/1/22	Fri 5/3/24	
4	Final Design Kickoff	1 day	Tue 4/12/22	Tue 4/12/22	2FS+5 days
5	Project Coordination	546 days	Fri 4/1/22	Fri 5/3/24	2
6	2.2 - Grant Administration	572 days	Fri 4/1/22	Mon 6/10/24	2
7	2.3 - Final Geotechnical Investigation	1 day?	Mon 1/3/22	Mon 1/3/22	
8	2.4 - Final Engineering Design	210 days	Wed 4/13/22	Tue 1/31/23	
9	60% Design Docs	91 days	Wed 4/13/22	Wed 8/17/22	2
10	60% Engineering Design	70 days	Wed 4/13/22	Tue 7/19/22	4
11	60% Construction Cost Estimate	5 days	Wed 7/6/22	Tue 7/12/22	10FS-10 days
12	60% QC	5 days	Wed 7/20/22	Tue 7/26/22	10
13	Submit 60% Design to District	0 days	Tue 8/9/22	Tue 8/9/22	12FS+10 days
14	60% Review Meeting	, 1 dav	Wed 8/17/22	Wed 8/17/22	13FS+5 davs
15	90% Design Docs	45 davs	Thu 8/18/22	Wed 10/19/2	2
16	90% Engineering Design	35 davs	Thu 8/18/22	Wed 10/5/22	2 14
17	90% Construction Cost Estimate	5 davs	Thu 9/22/22	Wed 9/28/22	16FS-10 davs
18	90% QC	5 davs	. , Thu 10/6/22	Wed 10/12/2	16
19	Submit 90% Design to District	0 davs	Wed 10/19/22	Wed 10/19/2	18FS+5 davs
20	90% Review Meeting	0 days	Mon 10/17/22	Mon 10/17/2	2
21	100% Design Docs	51 davs	Thu 10/20/22	Thu 12/29/22	2
22	100% Engineering Design	35 davs	Thu 10/20/22	Wed 12/7/22	19
23	100% Construction Cost Estimate	5 davs	Thu 11/24/22	Wed 11/30/2	22FS-10 davs
24	100% QC	5 days	Thu 12/8/22	Wed 12/14/2	22
25	Submit 100% Design to District	0 davs	Wed 12/21/22	Wed 12/21/2	24FS+5 davs
26	100% Review Meeting	1 dav	Thu 12/29/22	Thu 12/29/22	225FS+5 davs
27	Bid Documents	23 davs	Fri 12/30/22	Tue 1/31/23	
28	Prepare Bid Documents	15 davs	Fri 12/30/22	Thu 1/19/23	26
29	Bid Document QC	3 davs	Fri 1/20/23	Tue 1/24/23	28
30	Submit Bid Documents to District	5 davs	Wed 1/25/23	Tue 1/31/23	29
31	2.5 - Permitting Assistance	0 days	Mon 6/1/20	Mon 6/1/20	
32	DDW Application for Construction				
33	PG&E Coordination				
34	SWPPP Assistance				
35	2.6 - Bidding and Construction	330 days	Wed 2/1/23	Tue 5/7/24	
36	2.6.1 - Bid Period	60 days	Wed 2/1/23	Tue 4/25/23	
37	Advertise & Bidding	30 days	Wed 2/1/23	Tue 3/14/23	30
38	Bid Review	, 10 days	Wed 3/15/23	Tue 3/28/23	37
39	Award & Execute Contract	, 20 davs	Wed 3/29/23	Tue 4/25/23	38
40	2.6.2 - Construction	260 davs	Tue 5/9/23	Tue 5/7/24	
41	Notice to Proceed	0 davs	Tue 5/9/23	Tue 5/9/23	39FS+10 davs
42	Mobilization	15 davs	Wed 5/31/23	Tue 6/20/23	41FS+15 davs
43	Construction	10 mons	Wed 6/21/23	Tue 3/26/24	42
44	Subst. Completion	0 davs	Tue 3/26/24	Tue 3/26/24	43
45	Final Completion	0 davs	Tue 5/7/24	Tue 5/7/24	44FS+30 davs



**Attachment D** 

# A portion of Kennedy Jenks Design Plans, 60% Design

# CONTRACT DRAWINGS MCKINLEYVILLE COMMUNITY SERVICES DISTRICT MCKINLEYVILLE, CALIFORNIA

# **4.5 MG WATER RESERVOIR PROJECT**



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CATION: SERVOIR	2
S. HIGHMAY 101	

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G-02	GENERAL ABBREVIATIONS
G-03	GENERAL NOTES, LEGENDS AND DESIGN CRITERIA
G-04	GENERAL EQUIPMENT DESIGNATIONS, PROCESS IDENDIFICATION CODES AND PIPE SCHEDULE
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I-01	P&ID LEGEND AND ABBREVIATIONS
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I-03 *	CONTROL PANEL ELEVATION AND SCHEMATIC
I-04	P&ID COCHRAN WATER RESERVOIRS
I-05	P&ID NORTON ROAD WATER RESERVOIRS

\* DRAWINGS NOT PROVIDED IN THIS SUBMITTAL

# COVER, GENERAL LOCATION AND VICINITY MAPS, DRAWING INDEX

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AUGUST 2022								
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60% SUBMITTAL					SCALES	ROFESSION	DESIGNED CLS	McKINLEYVILLE COMMUNITY SERVICES DISTRICT McKINLEYVILLE, CALIFORNIA
DESIGN DEVELOPMENT PHASE NOT FOR CONSTRUCTION					0 25mm IF THIS BAR IS NOT	2 NOTOFFICE CONSTRUCTION	DRAWN CLS	4.5 MG WATER RESERVOIR PROJECT
HIS DOCUMENT IS AN INTERIM DOCUMENT AND NOT SUITABLE FOR ISTRUCTION. AS AN INTERIM DOCUMENT, IT MAY CONTAIN DATA THAT OTENTIALLY INACCURATE OR INCOMPLETE AND IS NOT TO BE RELIED PON WITHOUT THE EXPRESS WRITTEN CONSENT OF THE PREPARER.	NO	REVISION	DATE	BY	ADJUST SCALES ACCORDINGLY.	THE OF CALFORN	CHECKED CLW	Kennedy Jenks

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JOB NO 2076050.00 DATE AUGUST 2022

SCALE

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	MULTIPLY THRUST BY DEGREE OF DEFLECTION TO OBTAIN TOTAL THRUST
N	DTES:
1.	IN USING THE ABOVE TABLES, USE THE MAXIMUM INTERNAL PRESSURE ANTICIPATED (i.e. HYDROS' TEST PRESSURE) POSSIBLE SURGE PRESSURE D

35

72

122

197

278

IMUM ROSTATIC JRE DUE TO PUMP SHUT-OFF, ETC.

SIDE THRUST PER 100 PSI PRESSURE

PER DEGREE OF DEFLECTION

PIPE SIZE | SIDE THRUST-Ib | PIPE SIZE | SIDE THRUST-Ib

14

16

18

20

24

- 2. SEE SOILS REPORT FOR BEARING STRENGTH OF SOIL IN THE ABSENCE OF A SOILS REPORT AN AVERAGE SOIL (SPADABLE MEDIUM CLAY) CAN BE ASSUMED TO HAVE A BEARING STRENGTH OF 2000 PSF
- 3. USE LIGHTWEIGHT CONCRETE FOR HILL THRUST BLOCK.
- 4. CONCRETE FOR THRUST BLOCKS TO BE 2000 PSI.

## CONCRETE THRUST BLOCKS

4

6

8

10

12

C-5401	]
SCALE: NTS REV 0	5

377

486

665

790

1150

C-5001 SCALE: NTS REV 00

THRUST PER PSI OF WATER

PRESSURE AT VARIOUS FITTINGS

55

154

296 383

94

19

39

67

109

155

210

 90°
 45°
 22 1/2°

 ELBOW
 ELBOW
 ELBOW

30

 134
 04
 43

 218
 119
 61

 296
 161
 82

 383
 209
 106

 494
 269
 137

 611
 333
 169

 878
 478
 244

51 26 84 43

7

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27 15



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DESIGN DEVELOPMENT PHASE NOT FOR CONSTRUCTION					0 25mm IF THIS BAR IS NOT DIMENSION SHOWN,		DRAWN HCS	4.5 MG WATER RESERVOIR PROJECT
THIS DOCUMENT IS AN INTERIM DOCUMENT AND NOT SUITABLE FOR ONSTRUCTION. AS AN INTERIM DOCUMENT, IT MAY CONTAIN DATA THAT POTENTIALLY INACCURATE OR INCOMPLETE AND IS NOT TO BE RELIED UPON WITHOUT THE EXPRESS WRITTEN CONSENT OF THE PREPARER.	NO	REVISION	DATE	BY	ADJUST SCALES ACCORDINGLY.	And Galford	CHECKED CLW	Kennedy Jenks

	SCALE AS SHOWN				
DETAILS - IV	JOB NO 2076050.00				
	DATE AUGUST 2022				
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60% SUBMITTAL					SCALES	ROFESSION C	DESIGNED CLS	McKINLEYVILLE COMMUNITY SERVICES DISTRICT McKINLEYVILLE, CALIFORNIA		
DESIGN DEVELOPMENT PHASE NOT FOR CONSTRUCTION					0 25mm IF THIS BAR IS NOT DIMENSION SHOWN	MONTON CONTRACTOR	DRAWN WAS	4.5 MG WATER RESERVOIR PROJECT		
THIS DOCUMENT IS AN INTERIM DOCUMENT AND NOT SUITABLE FOR CONSTRUCTION. AS AN INTERIM DOCUMENT, IT MAY CONTAIN DATA THAT S POTENTIALLY INACCURATE OR INCOMPLETE AND IS NOT TO BE RELIED UPON WITHOUT THE EXPRESS WRITTEN CONSENT OF THE PREPARER.	NO	REVISION	DATE	BY	ADJUST SCALES ACCORDINGLY.	ATTENT CALEGORY	CHECKED CLW	KI Kennedy Jenks		

5		

PIPE SIZE	"D"	DOWELS	ANCHOR BOLT	STEEL STRAP
<u>≤</u> 6"	6"	#4 @12"	1/2"	1/4" X 1 1/2"
>6" < 12"	1'-0"	#4 @12"	5/8"	3/8" X 2"
>12" < 30"	1'-6"	#5 @12"	3/4"	3/8" X 2"
>30" < 38"	2'-0"	#6 @12"	1"	1/2" X 3"
>38" ≤ 60"	2'-6"	#6 @12"	1"	2 - 1/2" X 3" (9" FROM EACH EDGE)

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#### GENERAL SHEET NOTES

- PROVIDE TEMPORARY PROPANE UNTIL GENERATOR IS OPERATIONAL. THIS MAY REQUIRE A TEMPORARY PROPANE TANK AND PIPING.
- AS REQUIRED REPLACE CHAIN LINK FENCE AND GATE PRIOR TO CONSTRUCTION COMPLETION. FOR CHAIN LINK FENCE AND GATE, SEE SHEET C-04 DETAILS C-6001 & C-6121 2. RESPECTIVELY.
- DEMOLISH EXISTING VAULT AND SALVAGE BOLLARDS TO BE IMPROVED PER DWGS C-13 AND C-15. NO VEHICLE TRAFFIC 3. SHALL TRAVERSE EXISTING VAULT UNTIL IMPROVEMENTS HAVE BEEN COMPLETED. PROTECT AND SUPPORT ALL EXISTING UTILITIES DURING DEMOLITION AND PRIOR TO INSTALLATION OF NEW VAULT, AS REQUIRED.
- ANY FOOTINGS/FOUNDATIONS/SLABS ASSOCIATED WITH ANY ITEM IDENTIFIED TO BE DEMOLISHED ARE TO BE REMOVED IN THEIR ENTIRETY.

	SCALE 1" = 50'			
DEMOLITION PLAN	JOB NO 2076050.00			
	DATE AUG	UST 202	2	
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#### GENERAL SHEET NOTES

- 1. INSTALL PIPE TRENCH CHECK DAMS IN 50-FT INTERVALS.
- INSTALL FILL OVER PIPELINE WHERE DEPTH OF COVER IS LESS THAN 4 FEET. GRADE TO MATCH EXISTING AT A MAX 2:1 SLOPE AWAY FROM THE PIPE CENTERLINE.
- 3. RE-GRADE AS NEEDED TO MAINTAIN LESS THAN 1 DEGREE OF DEFLECTION ALONG THE PIPELINE.
- PROVIDE PIPE SUPPORT AT END OF PIPE. INSTALL RIPRAP ADJACENT TO CONC PIPE SUPPORT. 4.

18" OVERFLOW OUTFALL, SEE

TANK OVERFLOW PIPING
PLAN AND PROFILE

2076050.00 DATE AUGUST 2022 SHEET OF

1" = 40'

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60% SUBMITTAL					SCALES	HOFESSION LEE BY STAT	DESIGNED DLB	McKINLEYVILLE COMMUNITY SERVICES DISTRICT McKINLEYVILLE, CALIFORNIA
DESIGN DEVELOPMENT PHASE NOT FOR CONSTRUCTION					0 25mm IF THIS BAR IS NOT DIMENSION SHOWN.	₩ WOTFOR No. C45483 CUNSTRESIDENT	DRAWN NEB	4.5 MG WATER RESERVOIR PROJECT
THIS DOCUMENT IS AN INTERIM DOCUMENT AND NOT SUITABLE FOR NSTRUCTION. AS AN INTERIM DOCUMENT, IT MAY CONTAIN DATA THAT POTENTIALLY INACCURATE OR INCOMPLETE AND IS NOT TO BE RELIED IPON WITHOUT THE EXPRESS WRITTEN CONSENT OF THE PREPARER.	NO	REVISION	DATE	BY	ADJUST SCALES ACCORDINGLY.	CIVIL CIVIL	CHECKED PDS	KI Kennedy Jenks





TANK FOUNDATION. LAP EDGES MIN. 6".

A 6 MIL POLYETHYLENE LINER SHALL BE PLACED ON TOP OF THE FINAL LEVELING BASE DIRECTLY BELOW THE CONCRETE

2. 30 MIL. PVC LINER FOR LEAK DETECTION. SEAL PVC PIPE

#### GENERAL SHEET NOTES:

ENTRANCE.

		SCALE			
		AS SHOWN			
		JOB NO			
	RESERVOIR SECTION	2076050.00			
		DATE			
		AUGUST 2022			
		SHEET OF			
		S-12			



	SCALE AS SHOWN
FOUNDATION SECTIONS AND ELEVATION	JOB NO 2076050.00
	DATE AUGUST 2022
	SHEET OF S-13

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#### GENERAL SHEET NOTES:



- WATERSTOP TO BE TIED OFF IN BOTH DIRECTIONS AT 12" O.C. FORM TIE HOLES TO BE PLUGGED WITH DAYTON "SURE PLUG" IN ROUGHENED HOLE, COATED WITH SIKADUR 32 HI-MOD NS EPOXY, OR EQUAL, AND FILLED WITH CLASS A NON SHRINK GROUT
- PLACE A 1" THICK LAYER OF MODIFIED CONCRETE MIX AT THE BASE OF THE WALL PRIOR TO BEGINNING THE WALL CONCRETE PLACEMENT. SEE SPECIFICATION SECTION 03300 FOR MODIFIED CONCRETE MIX.

S-16

	WALL SECTION AND ELEVATION	SCALE AS SHOWN				
		JOB NO 2076050.00				
		DATE AU	GUST 202	22		
		SHEET	OF			
		i i	S-15			



#### GENERAL SHEET NOTES:

	WALL JOINT
	<ol> <li>CIRCUMFERENTIAL REINFORCING TIED TO VERTICAL BARS MUST EXTEND 2'-6"(±) PAST BOTH ENDS OF THE FIRST WALL SECTION AND ONE END OF ALL INTERMEDIATE WALL SECTIONS IN ORDER TO PROVIDE 2'-0" LAPS. CIRCUMFERENTIAL REINFORCING MAY NOT EXTEND PAST EITHER END OF THE LAST WALL SECTION. CIRCUMFERENTIAL REINFORCEMENT WITHIN THE WALL PANELS TO BE PROVIDED WITH 2'-0" LAPS.</li> <li>AT THE CONTRACTOR'S OPTION SOME OR ALL OF THE SEISMIC CABLES AT THE WALL JOINT MAY BE BENT BACK SO THEY DO NOT INTERFERE WITH THE WALL JOINT. IF CABLES ARE TO BE BENT BACK, BOTTOM 18" (MIN) OF CABLE TO BE PLACED AT 45°</li> <li>WALL JOINT WATERSTOP TO TERMINATE 2" FROM TOP OF WALL.</li> <li>TIE OFF WATERSTOP AT 12" OC EVERY DIRECTION.</li> </ol>
	VERTICAL PRESTRESSING
	<ol> <li>THREADBARS SHALL BE COATED WITH UNOCAL SOLUBLE OIL 10 RUSTBAN OR EQUAL PRIOR TO INSTALLATION INTO PVC PIPE.</li> <li>DURING EACH WALL POUR, FLUSH THE VERTICAL THREADBARS WITH CLEAN WATER FROM A HOSE PLACED THROUGH AN OPENING IN THE WOODEN CAP OVER THE TOP SQUARE STEEL TUBE.</li> </ol>
	<ol> <li>VERTICAL POST-TENSIONING OPERATION MAY COMMENCE ONCE TANK CONCRETE COREWALL HAS REACHED A MINIMUM CONCRETE COMPRESSIVE STOREMUCTURE 4 000 PDF</li> </ol>
	<ol> <li>PUMP EACH VERTICAL THREADBAR FROM THE BOTTOM GROUT CONNECTION WITH A 2-PART WATER INSENSITIVE EPOXY UNTIL THE ENTIRE NUT AT THE TOP ANCHOR CONNECTION HAS BEEN COVERED. DRYPACK THE REMAINDER OF THE TUBING WITH A 1C:2S MIX IMMEDIATELY AFTER THE INSIDE OF THE WALL CAN TUBING HAS BEEN COATED WITH A BONDING AGENT. IN LIEU OF DRUMPING THE TUBING WITH A BONDING THE TUBING WITH A BONDING AGENT. IN LIEU OF DRUMPING THE TUBING TUBING THE TUBING TUBING THE TUBING TU</li></ol>
i IUTS	DRYPACKING, THE TUBING MAY BE FILLED WITH PEAGRAVEL PRIOR TO EPOXY GROUT PUMPING AND THE ENTIRE TUBING MAY BE PUMPED FULL OF EPOXY GROUT.
	9. LOCATION OF THE VERTICAL THREADBARS IS SHOWN ON SHEET S-15.
	<ol> <li>EACH VERTICAL TENDON SHALL BE STRESSED PRIOR TO WRAPPING TO AN INITIAL FORCE OF 173.9 KIPS (± 3.50 KIPS):</li> <li>ELONGATION OF BAR TO BE 2.17 IN.</li> </ol>
2	12. VERTICAL PRESTRESSING TENDONS SHALL BE 1 1/4" Ø THREADBARS ASTM A-722 TYPE II.
IS	<ol> <li>THREADBARS WITH QUENCHED OR TEMPERED STEELS ARE NOT ALLOWED.</li> <li>THREADBARS MAXIMUM CARBON CONTENT SHALL NOT EXCEED 0.55%</li> </ol>

WALL JOINT AND VERTICAL PRESTRESSING	SCALE AS SHOWN JOB NO 2076050.00			
	AUGUST 2022 SHEET OF S-16			





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60% SUBMITTAL				SCALES	PROFESSION AND A	DESIGNED DLB	McKINLEYVILLE COMMUNITY SERVICES DISTRICT McKINLEYVILLE, CALIFORNIA	CIRCUMEERENTIAL PRESTRESSING	SCALE AS SHOWN JOB NO
DESIGN DEVELOPMENT PHASE NOT FOR CONSTRUCTION				0 25mm IF THIS BAR IS NOT DIMENSION SHOWN,		DRAWN NEB	4.5 MG WATER RESERVOIR PROJECT	SCHEDULE AND DETAILS	DATE AUGUST 2022
THIS DOCUMENT IS AN INTERIM DOCUMENT AND NOT SUITABLE FOR CONSTRUCTION. AS AN INTERIM DOCUMENT, IT MAY CONTAIN DATA THAT IS POTENTIALLY INACCURATE OR INCOMPLETE AND IS NOT TO BE RELIED UPON WITHOUT THE EXPRESS WRITTEN CONSENT OF THE PREPARER.	NO REVISION	DATE	BY	ADJUST SCALES ACCORDINGLY.	CIVIL OF CALFORNIA	CHECKED PDS	K Kennedy Jenks		SHEET OF S-17

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SHOTCRETE

ENTRY TUBES

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	GENERAL SHEET NOTES:
	CIRCUMFERENTIAL PRESTRESSING:
	<ol> <li>THE MAXIMUM STRESS TOLERANCE IN ANY STRAND AT ANY POINT AT ANY ELEVATION ON THE TANK WALL AT ANY TIME DURING THE WRAPPING OPERATION SHALL NOT EXCEED ± 320 POUNDS FROM THE AVERAGE FORCE SETTING OF 14 AFE POUNDS</li> </ol>
TANK WALL	<ol> <li>THE CONTRACTOR SHALL PROVIDE A CONTINUOUSLY ELECTRONICALLY RECORDED FORCE APPLICATION GRAPH FOF THE FULL LENGTH OF ALL WRAPPED STRAND AS PERMANENT DOCUMENTED EVIDENCE THAT THE FORCE APPLICATION REQUIREMENTS HAVE BEEN MET. ALL SUCH FORCE READINGS MUST BE BASED ON CONTINUOUS SENSING OF THE STRAND BETWEEN THE TENSIONING DRUM AND THE WALL AS THE STRAND IS BEING LAID ON THE WALL.</li> </ol>
	<ol> <li>THE STRAND SHALL BE 3/8"Ø BEFORE GALVANIZING OF 0.85 OUNCES PER SQUARE FOOT AND A MIN BREAKING STRENGTH OF 14 400 PUNDS AFED CALVANIZING</li> </ol>
	<ol> <li>PRIOR TO PLACING ANY STRAND OR SHOTCRETE ON THE WALL ALL EXTERIOR SURFACES OF THE CONCRETE COREWALL WHICH WILL RECEIVE STRAND SHALL BE ABRASIVELY BLASTED WITH A SELF-CONTAINED WATER-BLASTING SYSTEM TO REMOVE ALL LAITANCE, FORM OIL, OR OTHER TYPES OF COATINGS. THE SURFACE SHALL BE CUT TO A MINIMUM CSP5 PROFILE AS ESTABLISHED BY ICRI OVER A MINIMUM OF 90% OF THE SURFACE BEING PREPARED. ONCE THE ABRASIVE BLASTING IS COMPLETE THE TANK WALL SURFACE SHALL BE</li> </ol>
PRESTRESSING	PRESSURE WASHED TO REMOVE ALL DUST RESIDUE ON THE WALL SURFACE.
STRAND LOCKOFF TREE	<ol> <li>IF MULTIPLE LAYERS OF STRAND ARE REQUIRED, PROVIDE 3/8" MINIMUM OF SHOTCRETE COVERAGE BETWEEN LAYERS.</li> </ol>
	<ol> <li>PROVIDE 1 1/2" MINIMUM OF SHOTCRETE COVERAGE OVER THE OUTER LAYER OF STRAND.</li> <li>ALL SHOTCRETE TO BE APPLIED WITH AN AUTOMATED PROCESS KEEPING THE NOZZLE AT A CONSTANT DISTANCE AND ANGLE AS IT TRAVELS AT A UNIFORM BI-DIRECTIONAL</li> </ol>
<u>ATIO</u> N	<ul> <li>SPEED. FINAL SHOTCRETE COVER TO HAVE A NATURAL GUN FINISH.</li> <li>8. CLEARANCE AROUND TANK TO BE UNOBSTRUCTED FOR 360 DEGREES AROUND CIRCUMFERENCE OF TANK FOR PRESTRESSING MACHINE OPERATION.</li> </ul>

COREWALL

- STEEL PLATE

- STEEL TUBING

TITTA

- STEEL CHANNEL



#### 

GENERAL SHEET NOTES:					
<ul> <li>COLUMN NOTES:         <ol> <li>PLACE A 1" THICK LAYER OF (1C:1S) MODIFIED CONCRETE SLURRY MIX AT THE BASE OF THE COLUMNS IMMEDIATELY PRIOR TO BEGINNING THE COLUMN POUR.</li> <li>PLACE A 1/2" THICK LAYER OF (1C:1S) MODIFIED CONCRETE SLURRY MIX AT THE COLUMN FOOTING RECESS IMMEDIATELY PRIOR TO BEGINNING THE COLUMN FOOTING PLACEMENT.</li> <li>COLUMN FOOTING RECESSES SHALL BE ADEQUATELY ROUGHENED AND CLEANED OF CURING COMPOUNDS BY SANDBLASTING, OR EQUAL, PRIOR TO PLACING THE COLUMN FOOTING.</li> </ol> </li> </ul>					

		AS SHO	WN
	TYPICAL COLUMN SECTIONS AND DETAIL	JOB NO 2076050	.00
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Kennedy Jenks

#### GENERAL SHEET NOTES:

#### ROOF REINFORCING NOTES:

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- SPLICES SHALL ONLY BE ALLOWED AT LOCATIONS SHOWN ON SHEET S-21.
   AT THE CONTRACTOR'S OPTION, WITHIN ANY BAY, THE BARS FROM ONE SPAN MAY BE EXTENDED TO PROVIDE THE STEEL FOR THE NEXT ADJACENT SPAN. IF BARS OF DIFFERENT SIZES ARE USED IN ADJACENT SPANS AND THE CONTRACTOR ELECTS
- TO EXTEND THE STEEL FROM ONE SPAN TO THE NEXT, THE LARGER SIZE BAR SHALL BE USED. GALVANIZED OR EPOXY COATED #4 BARS WITH 1 1/2" COVER
- MAY BE USED AS BURY OR CARRIER BARS FOR THE BOTTOM MAT OF REINFORCING.
- REGULAR ROOF REINFORCEMENT MAY NOT BE USED AS BURY OR CARRIER BARS. 4. 5.
- THE LOWER LAYER OF REINFORCING IN THE BOTTOM MAT SHALL BE PLACED IN THE SAME DIRECTION AS THE UPPER LAYER OF REINFORCING IN THE TOP MAT. PROVIDE 2" OF COVER FOR THE LOWER LAYER OF REINFORCING IN THE BOTTOM MAT AND 2" OF COVER FOR THE UPPER LAYER OF REINFORCING IN THE TOP MAT.

2 S-22

	SCALE AS SHOWN			
ROOF REINFORCING IN TOP MAT	JOB NO 2076050.00			
	DATE AUGUST 2022			
	SHEET OF			
	S-19			



#### GENERAL SHEET NOTES:

#### ROOF REINFORCING NOTES:

- SPLICES SHALL ONLY BE ALLOWED AT LOCATIONS SHOWN ON SHEET S-21.
   AT THE CONTRACTOR'S OPTION, WITHIN ANY BAY, THE BARS FROM ONE SPAN MAY BE EXTENDED TO PROVIDE THE STEEL FOR THE NEXT ADJACENT SPAN. IF BARS OF DIFFERENT SIZES
- ARE USED IN ADJACENT SPANS AND THE CONTRACTOR ELECTS TO EXTEND THE STEEL FROM ONE SPAN TO THE NEXT, THE LARGER SIZE BAR SHALL BE USED. GALVANIZED OR EPOXY COATED #4 BARS WITH 1 1/2" COVER
- 3. MAY BE USED AS BURY OR CARRIER BARS FOR THE BOTTOM MAT OF REINFORCING.
- REGULAR ROOF REINFORCEMENT MAY NOT BE USED AS BURY OR CARRIER BARS. 4. 5.
- OR CARRIEN BARS. THE LOWER LAYER OF REINFORCING IN THE BOTTOM MAT SHALL BE PLACED IN THE SAME DIRECTION AS THE UPPER LAYER OF REINFORCING IN THE TOP MAT. PROVIDE 2" OF COVER FOR THE LOWER LAYER OF REINFORCING IN THE BOTTOM MAT AND 2" OF COVER FOR THE UPPER LAYER OF REINFORCING IN THE TOP MAT.

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ROOF REINFORCING IN BOTTOM MAT	JOB NO 20	76050.00	)
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#### GENERAL SHEET NOTES:

#### ROOF OPENING NOTES:

- ADD REINFORCING EQUAL TO REGULAR REINFORCING THAT INTERSECTS THE OPENING AND PLACE HALF OF THE ADDED REINFORCING ON EACH SIDE OF THE OPENING. LENGTH OF REINFORCING SHALL MATCH THAT OF ADJACENT REINFORCEMENT

- STOP ALL REGULAR REINFORCING WHICH INTERSECTS THE OPENING 2" CLEAR OF THE OPENING ON ALL SIDES.
   ADDED REINFORCING SHALL BE SPACED BETWEEN REGULAR ROOF REINFORCING BARS AT 3" MINIMUM SPACING.
   LOCATE THE ADDED REINFORCING AT THE SAME ELEVATION AS REINFORCING THAT IS CUT TO AVOID OPENING, LOCATE ONE INFORCING THAT IS CUT TO AVOID OPENING, LOCATE ONE
- LAYER OF DIAGONAL BARS DIRECTLY BELOW THE TOP MAT AND ONE LAYER DIRECTLY ABOVE THE BOTTOM MAT. FIELD BEND REINFORCING THAT INTERFERES WITH ROOF EDGE. TOTAL REINFORCING LENGTH PAST THE OPENINGS SHALL BE AS SHOWN AROVE 5. SHOWN ABOVE.

ROOF HATCHES NOTES:

- HATCHES TO BE SINGLE LEAF ALUMINUM HATCHES.
   ALL ALUMINUM IN CONTACT WITH CONCRETE MUST BE COATED WITH A HEAVY BITUMASTIC COATING, EPOXY PAINT OR OWNERS IN UNDER DIVIDUAL COATING, EPOXY PAINT OR SHIMMED USING PVC.
- 8. USE SST WEDGE ANCHORS FOR ALL CONNECTIONS TO
- OSE 351 WEIGE ANONGS FOR ALL CONNECTIONS TO CONCRETE UNLESS NOTED OTHERWISE. WHERE SST BOLTS ARE IN CONTACT WITH DISSIMILAR METALS, USE INSULATING SLEEVES AND PHENOLIC WASHERS TO ELECTRICALLY ISOLATE THE BOLTS. 9.

#### ROOF VENT NOTES:

- VENT TO BE ALUMINUM. STAINLESS STEEL.
   SIZE PER PROJECT VENTING RATES.
   USE SST WEDGE ANCHORS FOR ALL CONNECTIONS TO CONCRETE UNLESS NOTED OTHERWISE.

	A	S SHOWN	1
ROOF OPENINGS	JOB NO 2	076050.00	)
	DATE AU	GUST 202	22
	SHEET	OF	
		S-22	

SCALE

![](_page_58_Figure_0.jpeg)

![](_page_59_Figure_0.jpeg)

GENERAL	SHEET	NOTES:
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PIPE

7.

1.	MINIMUM NUMBER OF ADDITIONAL REINFORCING BARS EACH SIDE OF OPENING SHALL BE EQUAL TO 1/2 THE NUMBER OF
	INTERRUPTED BARS IN EACH LAYER OF REINFORCING.
2.	MINIMUM SIZE OF ADDITONAL REINFORCING BARS TO EQUAL
	SIZE OF INTERRUPTED REINFORCING BARS.
3.	PROVIDE STANDARD HOOKS ON BARS IF LAP LENGTH
	EXTENSION CAN NOT BE OBTAINED OR AT JOINTS OR OTHER
	OBSTRUCTIONS. PLACE ADDITIONAL REINFORCING IN THE
	SAME PLANES AS THE INTERRUPTED REINFORCING.
4.	SPECIAL OPENING CONDITIONS SHALL BE AS INDICATED ON
	THE DRAWINGS OR AS DIRECTED BY THE OWNER'S

- REPRESENTATIVE.
  ALL REINFORCING TO CLEAR OPENING, PIPE OR FLANGE COLLARS BY 2" MINIMUM.
  WHEN THE DISTANCE BETWEEN THE OUTSIDE DIAMETER OF A PIPE OR SLEEVE TO AN INTERSECTING WALL/SLAB, ADJACENT PIPE OR SLEEVE IS LESS THAN THE SUM OF SPACES NECESSARY TO ACCOMMODATE THE REPLACEMENT REINFORCING AT THE MINIMUM SPACING, ONE OF THE EQUI OWING SHALL BE DONE. REINFORCING SHALL BE DONE:
  a) INCREASE BAR SIZE BY ONE SIZE.
  b) ADD ONLY ADDTIONAL REINFORCING NECESSARY TO MAINTAIN A MINIMUM OF 3" SPACING BETWEEN ADJACENT WALL/SLAB, PIPE OR SLEEVE.
- AUJACENT WALDSLAB, FIPE ON SLEEVE. IF NECESSARY, CENTER ON PIPE PENETRATION PRESTRESSING WRAPS @ 6" O.C. IF NECESSARY, LOW WRAP STRAND LOCK TREE SHALL BE DESIGNED AND PROVIDED ALL MATERIALS GALVANIZED, 8. TYP. EACH SIDE OF PENETRATION.

VERTICAL TENDONS AND WALL REINFORCING NOT SHOWN, LOCATE PIPE TO CLR VERTICAL TENDONS AND WATERSTOP BY 2" MIN, ADJUST SPACING OF MILD STEEL WALL REINFORCING TO CLR EMBEDDED PIPE FLANGES

OVERFLOW DETAILS	SCALE AS SHOWN JOB NO 2076050.00 DATE	
	SHEET OF S-24	

![](_page_60_Figure_0.jpeg)

DATE

BY

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REVISION

Kennedy Jenks

#### GENERAL SHEET NOTES:

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INTE	ERIOR LADDER NOTES:
1. 2.	LADDER MATERIAL SHALL BE FRP. OSHA COMPLIANT FALL PREVENTION DEVICE SHALL BE INSTALLED (SST SAF-T-CLIMB)
3. 4.	LADDER RUNGS TO BE SOLID BARS AND FLUTED. USE SST WEDGE ANCHORS FOR ALL CONNECTIONS TO CONCRETE UNLESS NOTED OTHERWISE.
EXT	ERIOR LADDER NOTES:
5.	ALL MATERIAL FOR EXTERIOR LADDER, SIDERAILS, RUNGS
6.	OSHA COMPLIANT FALL PREVENTION DEVICE SHALL BE
7. 8	LADDER RUNGS TO BE SOLID BARS AND KNURLED.
9.	ALL ALUMINUM IN CONTACT WITH CONCRETE MUST BE COATED WITH A HEAVY BITUMASTIC COATING, EPOXY PAINT OR SHIMMED USING PVC.
10.	USE SST WEDGE ANCHORS FOR ALL CONNECTIONS TO
11.	WHERE SST BOLTS ARE IN CONTACT WITH DISSIMILAR METALS, USE INSULATING SLEEVES AND PHENOLIC WASHERS TO FI FOTRICAL IV ISOLATE THE BOLTS
12.	WHERE SST BOLTS ARE PLACED IN THE WALL EXTERIOR, DRILL AND PLACE AFTER WRAPPING AND BEFORE FINAL SHOTCRETING. TAKE EXTREME CARE TO AVOID DAMAGING PRESTRESSING STRAND. PLACE A STEEL PIPE AROUND THE DRILL BIT TO KEEP BIT FROM COMING IN CONTACT WITH THE STRAND, INSERT BOLTS BEFORE SHOTCRETING TO MARK HOLE LOCATION. PACK HOLE IN SHOTCRETE WITH EPOXY BEFORE FINAL INSTALLATION OF BOLTS TO INSURE COMPLETE COVERAGE OF STRAND.
12.	WHERE SST BOLTS ARE PLACED IN THE WALL EXTERIOR, DRILL AND PLACE AFTER WRAPPING AND BEFORE FINAL SHOTCRETING, TAKE EXTREME CARE TO AVOID DAMAGING PRESTRESSING STRAND. PLACE A STEEL PIPE AROUND THI DRILL BIT TO KEEP BIT FROM COMING IN CONTACT WITH TH STRAND, INSERT BOLTS BEFORE SHOTCRETING TO MARK HOLE LOCATION. PACK HOLE IN SHOTCRETE WITH EPOXY BEFORE FINAL INSTALLATION OF BOLTS TO INSURE COMPLETE COVERAGE OF STRAND.

	SCALE AS SHOWN				
INTERIOR AND EXTERIOR LADDER DETAILS	JOB NO 20	76050.00	)		
	DATE AUC	GUST 202	22		
	SHEET	OF			
		S-25			

![](_page_61_Figure_0.jpeg)

![](_page_61_Figure_3.jpeg)

![](_page_62_Picture_0.jpeg)

В

EXISTING ELECTRICAL EQUIPMENT DEMOLITION

![](_page_62_Picture_2.jpeg)

EXISTING MCC AND RTU/PLC DEMOLITION

BOOSTER PUMP 3 CONTROLS TO BE REBUILT IN NEW RTU BY ICAD. ——— - RTU/PLC LOCATED IN THIS SECTION. ICAD SHALL REBUILD NEW RTU. MANUAL TRANSFER SWITCH	
<u>I</u> .	EXISTING PUMP NO. 3 CONTROLS
:	(LOCATED ON SIDE OF RTU/PLC SECTION)

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E		F				G		н			
	PANELBOARD LF	P-C1				FED FRC	DM: XFMR-C1				
208	208 /120 VOLTS, THREE PHASE, 4 WIRE BUS: 125 AIC: 10						MAIN: 125A/3P	MOUNTIN	IG: SURFA	CE	
СКТ.	DECODIDITION	cor		KVA TRIP		скт.	DECODIDITION	COI	NNECTED	KVA	TRIP
NO.	DESCRIPTION	Α	в	с	POLES	NO.	DESCRIPTION	Α	в	с	POLES
	LIGHTING - PUMP ROOM	0.1			20/1	2	RECEPTACLES - ELECTRICAL ROOM	0.4			20/1
5	LIGHTING - ELECTRICAL ROOM		0.1		20/1	4	RECEPTACLES - PUMP ROOM		0.7		20/1
;	LIGHTING - EXTERIOR SITE			0.2	20/1	6				1.0	20/2
,	LIGHTING - EXTERIOR BUILDING	0.1			20/1	8	SFACE HEATER I (FOMF ROOM)	1.0			20/2
)	LGT-CP		0.2		20/1	10			1.0		00/0
1	LCP-001A (MIXER 1)			1.8	30/1	12				1.0	20/2
3	LCP-001B (MIXER 2)	1.8			30/1	14	GENERATOR BATTERY CHARGER	1.0			20/1
5	LCP-001CB (MIXER 3)		1.8		30/1	16			1.2		20/2
7	LCP-001CA (SEISMIC VALVE 3)			0.2	20/1	18	GENERATOR BLOCK HEATER			1.2	
9	LCP-001 (SEISMIC VALVE 1)	0.2			20/1	20	PLC (RTU)	1.0			
21	LCP-002 (SEISMIC VALVE 2)		0.2		20/1	22	SPARE		0.0		20/1
23	SPARE			0.0	20/1	24	SPARE			0.0	20/1
25	SPARE	0.0			20/1	26	SPARE	0.0			20/1
27	SPARE		0.0		20/1	28	SPARE		0.0		20/1
29	SPARE			0.0	20/1	30	SPARE			0.0	20/1
51	SPARE	0.0			20/1	32	SPARE	0.0			20/1
PHASE S	UBTOTALS (KVA):	2.2	2.3	2.2				3.4	2.9	3.2	
PHASE TO	OTALS (KVA):							5.5	5.2	5.4	
PHASE TO	OTALS (AMPS):							46.2	43.3	44.5	
OTAL (K	(VA):									16.1	KVA
ЛАХ РНА	SE AMPS									46.2	А
PERCENT	LOAD MAX PHASE:									36.9	%
OTAL (AMPERES):									45	Α	

		LUMI	NAIRE SCH	EDULE							
TYPE	DESCRIPTION	LAMPS	WATTS/ FIXTURE	MANUFACTURER CATALOG NUMBER	MOUNTING						
А	LINEAR SUSPENDED, HIGH EFFICIENCY LED, 4000 LUMENS, 4000K COLOR TEMPERATURE, 0-10V DIMMING CAPABLE	LED	43	LITHONIA MSL 400LM SBL MVOLT GZ10 40K 80CRI (E10WLCP) OR EQUAL	PENDANT						
в	EMERGENCY LIGHT/EXIT COMBO, SINGLE FACE, GREEN LETTERING, NICKLE-CADMIUM BATTERY OPERATED, TWO 12V, 1W LED LAMPS, FUSED 120 VOLT INPUT, W/TEST SWITCH	(2) 1.8W LED	3.6	LITHONIA #ECRG SQ M6 OR EQUAL	SURFACE WALL						
С	WALLPACK, LED WITH TAMPER PROOF SCREWS	LED	25	LITHONIA #WST LED P2 30K VF MVOLT BBW PIR DBLXR OR EQUAL	SURFACE WALL						
D	EMERGENCY LIGHT, NICKLE-CADMIUM BATTERY OPERATED TWO 12V, 1W LED LAMPS, FUSED 120 VOLT INPUT W/TEST SWITCH	(2) 1.8W LED	3.6	LITHONIA #EU2L LED M12 OR EQUAL	SURFACE WALL						
Ν	AREA LUMINAIRE, TYPE 2 OPTICS POLE MOUNTED LED WITH NEMA TWIST LOCK	LED	75	LITHONIA #AS1 LED 42C 530 40K SR2 MVOLT SPA PER DBLXD DLL 127F 1.5JU OR EQUAL	POLE						
Р	POLE, STEEL 4" SQUARE, 16'			LITHONIA #SSS 16 4C DM19AS DBLXD OR EQUAL							

![](_page_62_Figure_7.jpeg)

60% SUBMITTAL					SCALES	PROFESSIONAL SC/1 SC/1 SG	DESIGNED SLS	McKINLEYVILLE COMMUNITY SERVICES DISTRICT McKINLEYVILLE, CALIFORNIA
DESIGN DEVELOPMENT PHASE NOT FOR CONSTRUCTION					0 25mm IF THIS BAR IS NOT DIMENSION SHOWN,		JL JL	4.5 MG WATER RESERVOIR PROJECT
HIS DOCUMENT IS AN INTERIM DOCUMENT AND NOT SUITABLE FOR ISTRUCTION. AS AN INTERIM DOCUMENT, IT MAY CONTAIN DATA THAT OTENTIALLY INACCURATE OR INCOMPLETE AND IS NOT TO BE RELIED PON WITHOUT THE EXPRESS WRITTEN CONSENT OF THE PREPARER.	NO	REVISION	DATE	BY	ADJUST SCALES ACCORDINGLY.	DITE OF CALIFORN	CHECKED JRM	K Kennedy Jenks

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![](_page_62_Figure_14.jpeg)

![](_page_63_Figure_0.jpeg)

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REVISION

DATE

BY

MCSD COCHRAN BOOSTER PUMP STATION	JOB NO 2076
DEMOLITION PLAN AND	DATE AUGU
SINGLE LINE DIAGRAM	SHEET

8/5/2022 3:10 PM 년 년

![](_page_64_Figure_2.jpeg)

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COCHRAN TANK MCC ELEVATION SCALE: 3/4"=1-0"

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coc	HRAN TA	NK MCC NAMEPLATE SCHEDULE
NO.	LETTER SIZE	DESCRIPTION
1	1/2"	COCHRAN TANK MCC, 400A
2	1/4"	PG&E PULL SECTION
3	1/4"	MCC MAIN
4	1/4"	POWER MONITOR
5	1/4"	SURGE PROTECTIVE DEVICE
6	1/4"	ATS
7	1/4"	TRANSFORMER 'XFMR-C1' FEEDER
8	1/4"	100A SPARE
9	1/4"	BOOSTER PUMP 1
10	1/4"	BOOSTER PUMP 2
11	1/4"	BOOSTER PUMP 3
12	1/4"	SPACE
а	3/16"	HOA
b	3/16"	RESET
С	3/16"	RUNNING
d	3/16"	FAULT

![](_page_64_Figure_5.jpeg)

						)	DESIGNED	
60% SUBMITTAL					SCALES	SD PROFESSIONAL	SLS	
					0 — 1"	FRELIMINAR	DRAWN	······································
DESIGN DEVELOPMENT PHASE					0 25mm	2 No. E15453 mm	5.000	4.5 MG WATER RESERVOIR PROJECT
NOT FOR CONSTRUCTION					IF THIS BAR IS NOT		JL	
THIS DOCUMENT IS AN INTERIM DOCUMENT AND NOT SUITABLE FOR					ADJUST SCALES	S ECTRICA IN	CHECKED	
SPOTENTIALLY INACCURATE OR INCOMPLETE AND IS NOT TO BE RELIED					ACCORDINGLY.	THE OF CALIFORN	IPM	K Kennedy Jenks
UPON WITHOUT THE EXPRESS WRITTEN CONSENT OF THE PREPARER.	NO	REVISION	DATE	BY		_	JICIVI	

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#### SHEET KEYNOTES

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A. EXISTING DUAL VOLTAGE BOOSTER PUMPS TO BE REWIRED FROM 240V, 3 PHASE TO 480V, 3 PHASE.

MCSD COCHRAN LOAD ANA	LYSIS
DESCRIPTION	KVA
BOOSTER PUMPS 2 AT 5 HP, 1 AT 15HP	42.7
TRANSFORMER C-1	45.0
CONTINUOUS LOAD	54.0
TOTAL KVA	141.7
AMPS	171A

#### COCHRAN TANK MCC, NEMA 1, 400A, 480V, 3PH, 4W SERVICE ENTRANCE

![](_page_65_Figure_0.jpeg)

60% SUBMITTAL					SCALES 0 1"	PROFESSIONAL S C A	DESIGNED	McKINLEYVILLE COMMUNITY SERVICES DISTRICT McKINLEYVILLE, CALIFORNIA
DESIGN DEVELOPMENT PHASE NOT FOR CONSTRUCTION					0 25mm IF THIS BAR IS NOT DIMENSION SHOWN.	₩ ₩ €	JL JL	4.5 MG WATER RESERVOIR PROJECT
IS DOCUMENT IS AN INTERIM DOCUMENT AND NOT SUITABLE FOR TRUCTION. AS AN INTERIM DOCUMENT, IT MAY CONTAIN DATA THAT TENTIALLY INACCURATE OR INCOMPLETE AND IS NOT TO BE RELIED IN WITHOUT THE EXPRESS WRITTEN CONSENT OF THE PREPARER.	NO	REVISION	DATE	BY	ADJUST SCALES ACCORDINGLY.	SHIE OF CALIFORN	CHECKED JRM	K Kennedy Jenks

$\bigcirc$	SHEET KEYNOTES
A.	CONTRACTOR SHALL FIELD DETERMINE EXACT SIZE REQUIRED OF JUNCTION BOX TO INTERCEPT CONDUITS/WIRE UPON REMOVAL OF EXISTING MCC. FOR BID PURPOSES, ASSUME 12"X12"X12" BOX.
В.	CONTRACTOR SHALL FIELD DETERMINE IF EXISTING HEATERS CAN OPERATE OFF OF 208V. FOR BID PURPOSES, CONTRACTOR SHALL REPLACE HEATERS WITH A MINIMUM OF 3KW, 208V, CEILING MOUNTED, WITH REMOTE CONTROLLED THERMOSTAT.
C.	CONTROL PANEL, RELOCATED FROM EXISTING MCC/PLC ENCLOSURE. WORK TO BE PERFORMED BY ICAD. CONTRACTOR TO PROVIDE ENCLOSURE, SIZE XXXX.

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MCSD COCHRAN BOOSTER PUMP STATION
PLAN

1/2"=1'-0"
JOB NO
2076050.00
DATE
AUGUST 2022
SHEET OF
E-05

SCALE

![](_page_66_Figure_0.jpeg)

Plot Date: 8/5/2022 4:01

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JEAN LEIPZIG

/som.kjce-pw/Documents/Clients/McKinleyville Community Svcs Dist (CA)Projects/4,5 MG Water Reservoir Project\_2076050.00110-Design110.06-Drawings/Electrical/207605 o

![](_page_67_Figure_0.jpeg)